8200.1/988

DSAM 8200.1
AR 702-4
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AFR 74-15
MCO P4855.4A

DEFENSE SUPPLY AGENCY

PROCUREMENT QUALITY ASSURANCE

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CHANGE NO. 5
DLAM 8200.1

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I. DLAM 8200.1/AR 702-4/SECNAVINST 4355.16/AFR 74-15/MCO P4855.4A, 30 Aug 76, is changed as follows:

A. Cover page: Delete "NAVMATINST 4355.69A" and substitute "SECNAVINST 4355.16".

B. Remove pages listed below and insert revised pages. Changes are indicated by marginal lines.

Remove Old	Insert New
xiii thru xv	xiii thru xvii
111 thru 116	111 thru 116.3

II. SIGNIFICANT CHANGES. Section IX, part 15, Contract Quality Assurance for Computer Software (CS), was completely revised and should be reviewed in its entirety. Section IX, part 17, DoD Parts Control Program, is added to provide guidance in the implementation of this DoD program.

III. This change sheet will be filed in front of the publication for reference purposes, after changes have been made.

BY ORDER OF THE DIRECTOR

JAMES S. SINGSANK
Colonel, USA
Staff Director, Administration

COORDINATION: DLA-A, DLA-LR, DLA-LP, DLA-KS, DLA-SE, Army (AMCQA), Navy (ASN(S&L)), Air Force (SAF/AQCM), Marine Corps (LMA-2)

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4 Apr 86

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Remove pages listed below and insert revised pages. Changes are indicated by marginal lines.

Remove Old	Insert New
xi thru xiv	xi thru xiv
55 thru 57	55 thru 58
83 thru 86	83 thru 86.2

II. SIGNIFICANT CHANGES. Section VI, First Article Approvals, and Section IX, Part 4, Packaging and Marking of Materiel for Shipment, have been completely revised and should be reviewed in their entirety. Section VI outlines and clarifies the responsibilities of the QAR, QA Supervisors, and CAO Technical Specialists, when first article tests are conducted by the contractor or the Government. Section IX, Part 4, reflects changes in DoD packaging concepts and defines packaging contract quality assurance actions of materiel procured for the Government.

CH 4
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AR 702-4
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III. This change sheet will be filed in front of the publication for reference purposes, after changes have been made.

BY ORDER OF THE DIRECTOR

JAMES J. SINISANK
Colonel, USA
Staff Director, Administration

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CHANGE NO. 3
DLAM 8200.1

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Remove pages listed below and insert revised pages. Changes are indicated by marginal lines.

Remove Old	Insert New
7	7
27 and 28	27 and 28
45 and 46	45 and 46

II. SIGNIFICANT CHANGES. Where progress payments are a part of the contract, the QAR should notify the ACO when there is a deficiency in the contractor's quality program or inspection system, high MRB/scrap and rework activity, high reinspection and retest by Government personnel.

III. This change sheet will be filed in front of the publication for reference purposes, after changes have been made.

BY ORDER OF THE DIRECTOR

George A. White

GEORGE A. WHITE
Colonel, USAF
Staff Director, Administration

COORDINATION: DLA-LR, DLA-LP, DLA-KS,
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DLAM 8200.1

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Remove pages 67 thru 71 and insert revised pages 67 thru 71. Changes are indicated by marginal lines.

II. SIGNIFICANT CHANGES

A. Section 8, Part 3, MATERIAL(S) REVIEW, has been revised in consonance with MIL-STD 1520B.

B. NASA and LEVEL I/SUBSAFE programs have been excluded from these procedures.

C. These new procedures do not require the QAR to be a member of the Material Review Board.

D. A corrective action Board (CAB) shall be established for major systems/ subsystems.

III. This change sheet will be filed in front of the publication for reference purposes, after the change has been made.

BY ORDER OF THE DIRECTOR

R. F. McCORMACK
Colonel, USA
Staff Director, Administration

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CHANGE NO. 1
DLAM 8200.1

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II. Significant Changes - Section IX, Part 15, Procurement Quality Assurance for Computer Software, was completely revised to reflect policy changes and advances in the state-of-the-art of computer software. Section IX, part 15, expands, and more clearly defines, the Procurement Quality Assurance actions for computer software.

III. This change sheet will be filed in front of the publication for reference purposes, after change has been made.

BY ORDER OF THE DIRECTOR

W. Starrett

WILLIAM I. STARRETT, JR.
Captain, SC, USN
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30 Aug 76

FOREWORD

(Supplementation within DSA is prohibited.)
(Local supplementation for Army is permitted but is not required. If supplements are issued, Army Staff agencies and major Army commands will furnish one copy of each to US Army Materiel Readiness Command, ATTN: DRCQA-P, 5001 Eisenhower Avenue, Alexandria, Virginia 22333; other commands will furnish one copy to the next higher headquarters.)
(Navy supplementation is prohibited.)
(Marine Corps supplementation is prohibited.)

This manual has been prepared for use by personnel responsible for performing DoD PQA functions. It is applicable to subcontracts at all tiers as well as prime contracts.

This manual is mandatory for use by all CAS components unless authority to deviate is granted at Departmental level.

The policy and procedures set forth herein encompass the policy established by DoD in the ASPR relative to PQA.

Basically, the manual addresses itself to the policy, procedures, and actions that are required to be implemented at the site designated for contract performance. The instructions contained herein are not all inclusive with respect to certain commodity areas or certain specialized programs that do not have an across-the-board application. There are specialized commodity instructions involving PQA contained in separate documents and appendices to this manual such as for petroleum, maintainance and overhaul, and clothing and textile materials which supplement or are used in lieu of these procedures.

This manual is written primarily around the responsibility of the QAR. Success of a plant-level Government QA program is normally dependent on this individual. Impact of outside influences notwithstanding, it is the QAR who signs or authorizes signature on a document such as the DD Form 250, Material Inspection and Receiving Report, which permits shipment of supplies and provides the basis for expenditure of public funds. While not used herein, the term "Resident-In-Charge QAR" is applicable in those situations where more than one QAR is assigned to a given contractor facility. These references to the QAR are generally concerned with the level of responsibility as opposed to indicating that the individual QAR must personally perform the activity being described.

The efforts of all PQA personnel, regardless of organizational level, are directed toward the single purpose of assuring that the supplies or services subject to PQA are in complete compliance with the terms of those contracts assigned for administration. The majority of PQA personnel involved in achieving the stated purpose are assigned at contractor facilities where the work is performed.

Of particular importance in accomplishment of the PQA mission is the role of the technical specialists. These specialists are individuals assigned to various organizational levels in QA within CAOs, Technical Activities, and Purchasing Offices who can provide expertise with respect to a given commodity area; on specialized subjects such as materials processes, calibration, reliability, maintainability, or for selected disciplines, such as electronics, mechanical or metallurgical. It is incumbent upon the QAR to make maximum use of available specialists in the performance of those re-

This manual supersedes DSAM 8200.1, 15 Aug 73, and Interim Issuances DCAS-Q-4-75, DCAS-Q-76-1, DCAS-Q-76-2, and DCAS-Q-76-12.
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sponsibilities for which he[1] is charged. At no time should a QAR take the position that requesting assistance is a reflection of his incapability. In recognition of the wide variety of products, processes, and procedures which may confront the QAR in his day-to-day operations, it is unreasonable to expect that QARs will always possess the total knowledge required to perform these activities.

The role of management and supervision, particularly the first level supervisor, is critical in the performance of the PQA mission. The first level supervisor is responsible for assuring that assigned QARs are technically competent, perform their assigned mission in a satisfactory manner, and receive required support.

All personnel involved in the PQA function must be thoroughly familiar with the contents of this manual.

It is essential that the records which document the results of PQA actions required by this manual are accurate, legible, and relatable to the individual determinations. The adequacy and accuracy of PQA records and related reports should receive the same emphasis as the determinations made relative to the technical aspects of a contract.

Duplicating or paraphrasing of policy, procedures, and forms in this manual by issuance of local direction is prohibited.

The procedures contained herein are provided for preparation of the in-plant PQA program and further direction should not be required. Amplifying, interpretive or supplemental publications will be issued at Departmental/agency level only. Formal changes to policy and procedures in this manual will not be published prior to concurrence by all DoD activities whose numbers are assigned to this manual.

Any suggestions for improvement in this manual should be submitted through channels to HQ DSA, ATTN: DCAS-Q; HQ DARCOM, ATTN: DRCQA-P; HQ NMC, ATTN: MAT06Q; HQ USAF, ATTN: LGPMA; or HQ MC, ATTN: LMO.

BY ORDER OF THE DIRECTOR

J. J. McALEER, JR.
Colonel, USA
Staff Director, Administration

[1]For convenience in reading, standard pronoun gender usage will be followed in this manual. Where such pronouns as "he" or "his", etc. are used, it should be understood to include "she" or "hers", etc.

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LIST OF ABBREVIATIONS

ACO—Administrative Contracting Officer
ADL—Authorized Data List
AFCMD—Air Force Contract Management District
AFPRO—Air Force Plant Representative Office
AFR—Air Force Regulation
AFSC—Air Force Systems Command
ALC—Air Logistics Center
ANA—Army, Navy, Air Force
AQL—Acceptable Quality Level
AR—Army Regulation
ARP—Alternative Release Procedure
ASPR—Armed Services Procurement Regulation
ATE—Automatic Test Equipment
BOA—Basic Ordering Agreement
CA—Corrective Action
CAO—Contract Administration Office
CAS—Contract Administration Services
CCP—Central Control Point
CDRL—Contract Data Requirements List
CEL—Contractor Experience List
CI—Configuration Item
CIP—Contractor Inspection Point
COC—Certificate of Conformance
CONUS—Continental United States
COR—Contracting Officer Representative
CPFF—Cost Plus Fixed Fee
CS—Computer Software
CSP—Continuous Sampling Plan
CTO—Cognizant Transportation Office
DARCOM—Development and Readiness Command
DCAS—Q—Defense Contract Administration Services—Quality
DCASR—Defense Contract Administration Services Region
DID—Data Item Description
DoDAAD—Department of Defense Activity Address Directory
DoDADL—Department of Defense Authorized Data List
DoDISS—Department of Defense Index of Specifications and Standards
DSAR—Defense Supply Agency Regulation
DTS—Defense Transportation System
ECP—Engineering Change Proposal
ER—Established Reliability
FCA—Functional Configuration Audit
FCAS—Foreign Contract Administration Services
FED—Federal
FMS—Foreign Military Sales

F.O.B.—Freight on Board
FP—Fixed Price
FSS—Federal Supply Schedule
GFP—Government Furnished Property
GSA—General Services Administration
IAC—Integrating Associate Contractor
IPI—Initial Product Inspection
IPV—Intensified Product Verification
MAP—Mutual Assistance Program
MIG—Gas, Metal-Arc
MILSTAMP—Military Standard Transportation and Movement Procedures
MIRR—Material Inspection and Receiving Reports
MP—Magnetic Particle
MRB—Material Review Board
NASA—National Aeronautics and Space Administration
NATO—North Atlantic Treaty Organization
NAVMATINST—Naval Materiel Command Instruction
NAVPRO—Naval Plant Representative Office
NAVSEA—Naval Sea Systems Command
NBS—National Bureau of Standards
NDT—Nondestructive Testing
NHB—NASA Handbook
NMC—Naval Materiel Command
OQE—Objective Quality Evidence
PCA—Physical Configuration Audit
PCI—Product Configuration Identification
PCO—Procuring Contracting Officer
PDM—Periodic Depot Maintenance
PE—Procedures Evaluation
PO—Purchasing Office
PQA—Procurement Quality Assurance
PR—Procedures Review
PT—Penetrant
PVI—Product Verification Inspection
QA—Quality Assurance
QALI—Quality Assurance Letter of Instruction
QAR—Quality Assurance Representative
QDE—Quality Data Evaluation
QPL—Qualified Product Lists
R&D—Research and Development
RCS—Reports Control Symbol
RPV—Reduced Product Verification
RT—Radiographic
SIR—Special Inspection Requirement
SPA—Specification Preparing Activity
STANAG—Standardization Agreement
SUBSAFE—Submarine Safe

TIG—Gas, Tungsten-Arc
TCN—Transportation Control Number
US—United States
UT—Ultrasonic
VECP—Value Engineering Change Proposals
VIS—Visual

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SECTION I

ESTABLISHED POLICY

1–100—PURPOSE. This manual implements policy in ASPR section XIV for performance of Government PQA actions by contract administration offices.

1–101—GENERAL. The policy and procedures of ASPR section XIV are applicable in toto and are not reproduced in this manual. Paraphrasing is minimized. The availability of ASPR section XIV at plant level is essential for development of an effective plant-level Government QA program.

1–102—SUPPORT OF OTHER CAO FUNCTIONAL ELEMENTS. QA personnel are, by virtue of their duty station, in a position to provide effective and economical support to other functional elements. Requests for technical assistance, advisory comments, and reports will be honored on a timely basis consistent with availability of resources and priority workload. Such requests will normally be in writing. The procedures to be used and the instructions for accomplishment will be provided by the requesting functional element. The requesting element will be advised promptly, through appropriate channels, of the inability to meet established time requirements and furnished a proposed completion date.

1–103—SUPPORT OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA). QA services on NASA contracts will be provided, on a reimbursable basis, as specified in the letter of delegation/redelegation and the response thereto. CAO personnel performing NASA work will be familiar with pertinent details of NASA Handbook NHB 5300.4(2B), and supplementary procedures specified in a particular NASA delegation which take precedence over this manual.

1–104—SUPPORT OF OTHER NON-DoD AGENCIES. QA services will be provided to other non-DoD agencies on a reimbursable basis.

1–105—SUPPORT OF THE CANADIAN GOVERNMENT

a. DoD policy provides for optimum coordination of the material acquisition programs of Canada and the United States to assure Canada a fair opportunity to share in research, development and production of military equipment and materiel on programs of mutual interests. This is accomplished by alleviating the restrictions of the Buy American Act on supplies mined, produced or manufactured in Canada, which are procured for public use. In such cases, the Canadian Commercial Corporation may place contracts with either Canadian or United States firms. These contracts must contain suitable provisions to obtain for DoD the same production rights, data, and information required by ASPR when military procurements are made in the United States.

b. A contract with a supplier or contractor located in Canada should normally be made with, and administered through, the Canadian Commercial Corporation, a corporation owned and controlled by the government of Canada.

c. Contract Administration Services on contracts placed with the Canadian Commercial Corporation are provided by the Department of Supplies and Services (Canada). This includes cost and pricing analysis, industrial security, accountability and disposal of Government property, production expediting, compliance with Canadian labor laws, processing of termination claims and disposal of termination inventory, customs documentation, processing of disputes and appeals, and any other contract management function concerning the Canadian supplier. Audits on such contracts, when

required, are performed by the Audit Services Bureau, Department of Supply and Services. Inspection Services, including personnel and facilities, are provided at no charge by the Department of National Defence (Canada).

d. Under f.o.b. origin contracts with the Canadian Commercial Corporation where inspection has been performed by the Department of National Defense, pursuant to the Letter of Agreement, acceptance of supplies or services which are in accordance with the terms of the contract, shall be made by the Department of National Defense on behalf of the U.S. Military Departments or DSA. Signing of the acceptance certificate on the applicable U.S. DoD inspection and acceptance form shall be considered satisfactory evidence for payment purposes.

e. Services shall be performed for the Department of Supplies and Services on a non-reimbursable basis, and for all other agencies of the Canadian Government on a reimbursable basis. In performing these services, the procedures in this manual shall be utilized.

1-106—SUPPORT OF OTHER FOREIGN GOVERNMENTS

a. Foreign governments and international organizations may deal directly with contractors in the United States without obtaining management or administrative assistance from a Military Department or other DoD agency. In that case, the foreign purchasers send their requests for QA services to the CCP for direct procurements, which is located within the Defense Contract Administration Services Region, New York, 60 Hudson Street, New York, N.Y. 10013. The CCP processes the requests and sends them to the Army, Navy, Air Force, or DSA CAS activities cognizant of the suppliers' plants. Those activities perform the QA services and report the man-hours and incidental costs involved to the CCP through their accounting and finance offices. The CCP then bills the foreign purchasers and disburses the amount collected to the proper Army, Navy, Air Force or DSA organizations.

b. Requests for QA services that are processed by DCASR, New York are identified with a request control number that begins with the letters FCAS. This symbol (FCAS), identifies a request for services on a direct procurement. Instructions for handling the request(s) are contained in joint regulation DSAR 8200.5/AR 715-23/NAVMATINST 4355.63A/AFR 400-22, Performance of Contract Administration Services on Direct Procurements of Foreign Governments or International Organizations. The regulation includes North Atlantic Treaty Organization (NATO) Standardization Agreement (STANAG 4107), Mutual Acceptance of Government QA. STANAG 4107, pertains to interchange of inspection services between countries that are listed in the document as members of NATO, and the Joint Regulation describes its application to foreign procurements in the U.S.

c. The DoD or its agencies may enter into formal agreements with foreign governments or international organizations concerning the services to be provided. A Military Department then receives requests for QA services from the foreign purchaser and sends them to the appropriate CAO for performance. In some cases, however, the agreements may authorize the foreign governments or international organizations to submit requests directly to the appropriate CAO. In any event, the agreements contain instructions for processing the requests that are binding upon both the United States and the foreign governments or international organizations. The CAO is furnished information regarding the terms of formal agreements.

d. Contractors occasionally receive foreign orders that call for U.S. Government inspection before the CAO receives an official request for QA services. If it is necessary to perform inspection on such an order before the official request is received, assurance must be obtained that the request for inspection on the foreign order is valid. The validity of the request may be verifiable through a reference on the order to an applicable formal agreement. Otherwise, assurance of the validity of the request must be obtained from the CCP at DCASR New York. (NOTE: Only the DCASR New York should be contacted for this information.)

e. Contractors may also receive subcontracts from foreign companies that are supplying a DoD procuring activity or a DoD contractor which call

for U.S. Government inspection. Orders of that type are not processed by the Military Departments or the CCP and the inspection costs are not reimbursable, since the U.S. DoD is the ultimate customer. Such subcontracts can usually be identified by the DoD contract number and appropriation number which will be shown on the contractual document. A questionable case should be referred to the U.S. company that received the order for clarification by the foreign purchaser. Clarification should include assurance that the request was authorized by the foreign purchaser.

f. Unless otherwise specified, QA services will not include the act of acceptance, and the costs of providing the services will be recorded and billed according to procedures outlined in DSAR 8200.5/AR 715-23/NAVMATINST 4355.63A/AFR 400.22.

1–107—SAFETY. QA personnel shall:

a. Comply with contractor safety requirements and obtain the necessary personal protective equipment (shoes, glasses, hard hats, and so forth) through Government channels.

b. In case of imminent danger, retreat to a safe location and advise the cognizant safety office and the contractor of the apparent danger in accordance with Department/Agency policy.

c. In the normal course of their duties, make notes of observations of apparent safety practice violations and promptly advise the office responsible for Specialized Safety of these observations through supervisory channels.

d. As requested, assist the office responsible for Specialized Safety in monitoring the status of contractor corrective action on safety violations.

e. Using DD Form 1904, notify the office responsible for Specialized Safety of contracts or subcontracts containing safety clauses, or apparent hazardous operations.

f. Advise the office responsible for Specialized Safety of reportable fires, accidents and explosions occurring at contractor facilities. In addition, report accidents which significantly degrade operational capability or otherwise did or probably will result in unusual interest by the public news media because of the exceptional circumstances.

SECTION II

CONTRACT PROVISIONS

2–100—PURPOSE. To provide procedural guidance on delegations, contract provisions, and areas of concern to but not directly the responsibility of QA personnel.

2–101—IMPORTANCE OF THE CONTRACT

a. A contract is an agreement between the buyer (Government in the case of a prime contract) and the seller (contractor). A contract must contain certain basic elements such as some form of consideration and an exchange of value, (product or service). The contract terms and conditions define the rights and obligations of the buyer and seller. As used herein, contract includes the usual supplies or services contracts, purchase orders, basic order agreements, and calls thereto.

b. PQA personnel become involved in the administration of a contract whenever the terms of the contract require PQA at source. PQA personnel are obligated to assure that the supplies or services required by the contract meet all the conditions of the contract. Of equal importance is the fact that PQA personnel cannot require a contractor to do more than is required to be done under the terms of the contract.

2–102—DELEGATION OF ADDITIONAL FUNCTIONS. In accordance with ASPR 20-703, it may be advisable for the purchasing office, on individual contracts, to delegate to the CAO functions which have not been designated in ASPR as contract administration functions. Prior to assigning such functions, the PO shall coordinate with the CAO to assure availability of resources for performing the additional functions. Bilateral agreements are neither required nor desired in accomplishing the above action. Further, agreements should not be negotiated for accomplishing normal CAO functions.

2–103—SPECIAL CONTRACT PROVISIONS OF CONCERN TO PQA PERSONNEL. There are some contract clauses, not directly related to product quality, which are of concern to PQA personnel.

a. *Changes.* ASPR 7-103.2 for Fixed-Price Supply Contracts and ASPR 7-203.2 for Cost Reimbursement type Supply Contracts provide for unilateral action on the part of the Government (Contracting Officer) and is limited to: Changes to drawings, design or specifications; changes in method of shipment or packing, and changes in place of delivery. The Changes Clause does not permit the Contracting Officer to change the scope of the work under a contract or add work or change quantities. This is an important point that should be recognized by both Government and contractor personnel. Only a Contracting Officer can issue a Change Order to the contract under the Changes Clause. Other Government personnel shall not: Execute modifications, act in such a manner as to cause the contractor to believe that they have authority to bind the Government, or direct or encourage the contractor to perform work which should be the subject of a modification. For example, the presence of QA personnel in contractors' plants creates an opportunity for industry personnel to discuss problems of contract requirement related to delivery of supplies. Delivery schedules are negotiated by the PCOs and ACOs, and normally the responsibility of the production element to administer. Personnel must refrain from acts which would imply an agreement to a change or extension in delivery schedules.

b. *Liquidated Damages ASPR 7-105.5*

(1) This clause is incorporated in a contract when the time of delivery or performance is of such importance that the Government may reasonably expect to suffer damages if the delivery or performance is delinquent. This clause is used when the actual damage to the Government for a delay in delivery or performance would be difficult or impos-

sible to determine. In lieu of actual damages, the clause provides for the contractor to pay to the Government as fixed, agreed, and liquidated damages a monetary amount for each calendar day of delay.

(2) Where a Liquidated Damages clause appears in a contract, it should be entered in DD Form 1904, Contract Review and Planning Document, block 51, remarks. Care must be exercised to ensure that untimely actions or inactions by Government representatives do not hamper the contractor's ability to perform in accordance with the specific requirements of the contract. QARs, upon receipt of a request for inspection from the contractor, shall ensure that their required services are provided in a timely manner. The QAR shall maintain a log indicating the dates and times of significant discussions with the contractor and instances where the QAR observes untimely actions or inactions by the contractor, which could result in noncompliance with a performance requirement of the contract, including delivery schedule. The ACO and the Industrial Specialist will be kept informed of significant facts in the matter.

c. *Safety Precautions for Ammunition, Explosives and Other Dangerous Materials*

(1) The safety requirements of DoD 4145.26-M, DoD Contractors Safety Manual for Ammunition, Explosives, and Related Dangerous Material, are to be applied to all contracts or subcontracts involving ammunition (excluding inert parts) or explosives. To accomplish this, ASPR 7-104.79 will be included in all contracts for ammunition, explosives, propellants and pyrotechnics. In addition to ASPR 7-104.79 the contract may include specific safety requirements peculiar to the hazards of the contract.

(2) The QAR shall coordinate with Specialized Safety personnel for assistance in developing a checklist for contractor facilities involved with explosives.

(3) ASPR 7-104.80 will be included in all contracts involving radioactive materials having an activity per gram greater than .002 microcuries.

(4) Some contracts may include safety clauses which are developed by the procuring activity for special applications concerning that contract.

(5) Where the appropriate safety clause is inadequate or nonexistent, the QAR will coordinate with Specialized Safety personnel. A DD Form 1716 will be prepared by Specialized Safety personnel and forwarded through channels to the PCO.

d. *Walsh-Healey Public Contracts Act*

(1) Where a prime contract is for the manufacture or furnishing of materials, supplies, articles, or equipment in an amount exceeding $10,000, the Walsh-Healey Public Contracts Act contract clause is applicable.

(2) The QAR or any component of the CAO does not have a responsibility for assuring contractor compliance to the act clause. This is a responsibility of the Department of Labor.

(3) Where the QAR observes conditions in a contractor's plant that he considers to be in violation of good safety and health practices he should immediately advise the specialized safety component servicing the CAO.

e. *Notification of Safety Deficiencies.*

(1) ASPR 7-103.5, SF 32 paragraph 5(c) is placed into the contract to assure that the contractor provides all reasonable facilities and assistance for the safety of Government QA personnel in plants and other areas they must pass through or be in for the performance of their duties.

(2) When the QAR becomes aware of a potential accident situation that threatens the well being of Government personnel, Government property or the scheduled completion of a Government contract, he shall promptly notify the cognizant office responsible for Specialized Safety through supervisory channels. The QAR will also provide follow-up notification of safety deficiencies which remain uncorrected. Specialized safety personnel will conduct an onsite survey when considered necessary.

f. *QAR Responsibility for Environmental Protection.* The primary responsibility for ensuring compliance with Federal environmental control laws rests with those agencies, such as the Environmental Protection Agency, charged with the responsibility under the laws concerned. However, it is the responsibility of all DoD personnel who, during the course of performing their regular duties, become knowledgeable of possible violations

of environmental control laws, to report such possible violations to the PCO through the ACO when assigned. Possible violations should be forwarded through established channels for consideration and appropriate actions with concerned personnel and activities. It is not intended, or expected, that personnel should become technical experts in the pollution control area or that they should devote time exclusively to the detection of possible violations of environmental control laws. Any possible violations reported should be incidental to performance of regular assigned duties.

g. Payments: Advance, FAR 7-104.34; Incentive, FAR 3-407; Progress, FAR 7-104.35. These clauses provide for payments to the contractor for factors other than shipped/delivered goods, products, or services. When either of these clauses is incorporated in the contract, the ACO may advise the QA personnel of the provision(s) and criteria which would affect the ACO's decision to release these payments. When there is a deficiency in the contractor's quality program or inspection system, high MRB/scrap and rework activity, high reinspection and retest by Government personnel, the QAR should alert the ACO with copies of each corrective action report. The QAR may be requested to provide specific data or reports necessary to support the ACO in administering the payments.

2-104-DISTRIBUTION OF CONTRACTS TO QA COMPONENTS

a. Prime contracts are normally received and distributed by the contract administration element of the CAO. The contract administration element forwards a copy to the QA component which in turn makes distribution to the QAR. Depending upon internal procedures, a second copy of the contract may or may not be distributed to technical personnel for review. Where a prime contract specifies a place of manufacture which is a different location from that of the prime contractor, the PO will send copies of the contract directly to the CAO having cognizance over the point of manufacture. Under these circumstances, the QAR will not receive a delegation or request for source inspection from the CAO having cognizance over the prime contractor, but shall be responsive to the requirements of the prime contract. The place of manufacture may involve a division of the prime contractor or it could involve a different contractor.

b. Conditions may arise where the contract will require delivery before the QAR's copy of the contract has been received through Government channels. In these instances, the contractor's copy of the contract is authorized for use.

c. CAOs frequently receive contracts for performance of contract administration functions other than quality assurance at origin with inspection and acceptance to be performed at destination. In these instances, Government PQA personnel at origin do not have the responsibility for performing PQA actions or any of the separately identified functions in FAR 1-406 normally performed by CAO QA personnel, unless otherwise provided for in the contract. In order to perform PQA functions at source, a contract requiring inspection and acceptance at destination must also designate the source location as a place where the Government reserves the right to perform those PQA actions that it considers necessary to determine that supplies conform to contract requirements. Therefore, when QA Letters of Instruction are received requesting PQA actions on destination only inspection and acceptance contracts, they shall be returned promptly suggesting the necessity for a contract change. The source location must be designated as an additional place where Government PQA is required before the CAO can perform the requested actions. However, information-seeking requests will be honored.

SECTION III

PREAWARD SURVEYS AND POSTAWARD CONFERENCES

3–100—PURPOSE. To establish uniform policy, assign responsibilities, and provide procedures for accomplishing the QA portion of preaward surveys and postaward orientation conferences.

3–101—GENERAL. Procedures in DSAM 8200.2, Procurement Quality Assurance Support Manual for Defense Contract Administration Services, will be followed by DSA CAO's when performing preaward surveys. The procedures in this section pertain only to postaward conferences.

a. The Government must be assured that:

(1) Contractual quality requirements are fully understood by contractors.

(2) There is mutual agreement between Government and contractor concerning interpretation of such requirements.

(3) Contractor management recognizes the QAR as the Government plant representative concerning quality requirements.

(4) Maximum resolution of Government-contractor differences are effected prior to commencement of production.

b. Lack of such assurance will increase the probability of rejections, production delays, late deliveries, terminations, field complaints, legal disputes, and other difficulties with corresponding Government/contractor losses in terms of men, money, and material.

c. QA personnel shall participate in postaward orientation conferences based on provisions described herein to facilitate achievement of the cited Government objectives. They will be qualified with respect to item PQA procedures, and the technical/engineering areas covered by the conference.

3–102—SELECTING CONTRACTS FOR POSTAWARD ORIENTATION CONFERENCES

a. Postaward orientation conferences normally will be established by the ACO. However, the QAR, other CAO elements, PCO or technical representative of the PO may initiate the request to the ACO for a conference. A conference of Government personnel normally shall be held prior to conferring with the contractor to assure that the Government position on all matters is established.

b. QA postaward conferences may be programmed when it is determined that there is no need for Government participation other than quality; or if there is a need to supplement the QA portion of a completed or proposed postaward orientation conference. QARs will arrange for, and normally conduct QA postaward conferences. Technical specialists will support QAR participation in all types of postaward orientation conferences.

c. Supporting administration procedures may apply in selected postaward orientation conferences. QA participation may be requested by ACOs located outside the CAO. Such requests may be made either directly to the QA element or via their ACO. QA personnel will communicate with and directly support any ACO requesting such services.

d. QA personnel will be guided by, but not limited to the following factors in determining the need for, limitation of, and extent of their participation in postaward orientation conferences:

(1) Preaward survey findings and recommendations (i.e., negative or marginal preaward).

(2) Results of previous postaward conferences.

(3) Critical nature and technical complexity of supplies and services from a QA viewpoint.

(4) Adverse quality history of the contractor and/or item or service being provided.

(5) Whether or not the contractor is a new supplier, has made internal changes affecting QA requirements, or a previous supplier furnishing a particular commodity or service to the Government

for the first time.

(6) Special provisions in the contract requiring mutual Government/contractor understanding. Examples of these are in-process inspection and test verification procedures, Government approval of first articles and control of Government-furnished materials.

(7) Extent of subcontracting as related to contractual QA requirements.

(8) An item or service of such a hazardous nature that special precautionary measures are indicated in the contract.

(9) Proprietary information involved which may conflict with implementation of QA provisions contained in the contract.

(10) Contract contains First Article Requirements.

(11) The QAR determines that other conditions exist which require postaward orientation conferences.

e. When factors in subparagraphs (1), (3), (4), (5), (6), (8), or (10) cited above are applicable, a QA Postaward Conference shall be programed, either separately (see paragraph 3-110) or as part of an ACO type Postaward Conference (see subparagraph a above).

3-103—QA AGENDA CONSIDERATIONS

a. The QA agenda covered during postaward conferences, whether called by the ACO, PCO, or for QA only, should normally include the following basic considerations:

(1) QA requirements specified in the contract.

(2) Functions of the QAR at the plant toward assuring that these requirements are complied with.

(3) Plans of the contractor toward meeting quality control requirements and his contractual obligation to provide the Government with the facilities, inspection aids, and required access clearances needed in the performance of PQA. (The term "facilities" contained in ASPR 7-103.5 Inspection should include office space and security for Government records when official duties require such office facilities.)

b. Utilization of the QA guidelines provided herein is intended to strengthen QA postaward conference procedures. The use of supplementary aids or other modifications designed to support this objective is encouraged.

3-104—PLANNING

a. All QA participants in a postaward orientation conference will be expected to have thoroughly reviewed contractual requirements relating to quality. In addition, they will have reviewed all available records, preaward and postaward documents, and other quality history records which may be applicable to the QA agenda covered at the conference.

b. Notation will be made of any contractual areas which may be inadequate, ambiguous or require detailed interpretation, or special emphasis. Prior to the conference, insofar as possible, any adjustments deemed necessary by QA conference representatives to correct or improve contract data packages from a QA viewpoint should be expedited to the purchasing office or technical activity as appropriate, in accordance with paragraph 3-106.

c. Formal scheduling of postaward orientation conferences does not preclude preliminary plant visits by QA personnel to conserve time by acquainting contractors with requirements and obtaining preliminary planning information such as data concerning the contractor's quality control systems, and/or suppliers' laboratories. Adequate planning will assure sufficient time to properly schedule and cover QA agenda topics during the conference. Every effort should be made to exclude irrelevant, time-consuming subjects.

3-105—QUALITY ASSURANCE DISCUSSION SUBJECTS. During postaward orientation conferences, QA participants will promote Government-contractor agreement and mutual understanding with respect to interpretation of contractual QA requirements. In support of this objective, the following agenda topics are furnished as guidance for review and discussion during the conference. The extent to which this agenda is utilized or otherwise modified is dependent on the judgment of the QA participants as well as any supplementary ACO/PCO instruction or guidance.

a. *Contractor's Written Quality or Inspection*

Procedures. Where a review of contractor's written procedures is applicable, every effort should be made to accomplish this by the scheduled post-award conference to determine completeness and adequacy. If a contractor has failed to prepare his contractually required written procedures, the QAR shall immediately take corrective action. If written procedures are available and found to be inadequate, the deficiencies will be discussed with the contractor to assure appropriate and timely corrective action. Further, if the deficiencies are considered serious enough, the QAR shall escalate corrective action to ensure contractor compliance.

b. *Preaward Commitments.* All documented commitments made at the time of preaward survey will be thoroughly reviewed to determine if the commitment has been met. If a commitment, which can be independently verified within the scope of the contract, has not been met, an appropriate method of corrective action will be initiated. The ACO will be requested to advise the contractor that the Government will not inspect/accept end items until evidence is furnished that all discrepant conditions have been satisfactorily resolved.

c. *Special Quality Control and Related Contractual Provisions.* The adequacy of the contractor's quality control system, housekeeping, and manufacturing practices to meet special contractual provisions will be reviewed. Areas of discussion may include such items as quality/inspection specifications, Federal, state, and local laws and regulations, special commodity-oriented standards and contractual provisions relating thereto, contractor sampling procedures, identification and control of in-process material and items, and final acceptance criteria.

d. *Specifications and Other Work Requirements.* The contents of the applicable purchase description specifications, safety requirements, engineering drawings, classification of defects or other pertinent technical data package documents relating to the product will be reviewed. The extent of review with the contractor should be based on the QAR's determination of whether or not the contractor has complete documents, and whether or not the contractor understands them.

e. *Control of Government Property.* When assigned as a QA function, review contractor's responsibilities with respect to proper quality control, storage, maintenance, safeguarding, utilization and disposition of Government property.

f. *Quality Control Performance Considerations.* To assure mutual Government-contractor understanding in this area, the QAR will review and identify product and process inspection requirements as deemed necessary. This portion of the agenda may include review of such matters as;

(1) Testing and other inspection to be performed on components and finished products.

(2) Determining if required testing and other inspection can be performed with the equipment and personnel available to the contractor.

(3) The adequacy of the contractor's test facilities including test equipment, measuring devices, and the related calibration program as well as capabilities for expensive and time consuming test.

(4) The extent of QAR involvement in test and other inspection procedures at the contractor's plant(s). Included in this area are in-process and final inspection requirements which will be concurrently witnessed, performed or otherwise verified by the Government.

(5) Contractor's sampling procedures, requirements for special samples (i.e., first article, preproduction), nondestructive test samples, quality and reliability program samples, various other verification samples, and/or stability study samples as well as adequacy of contractor's sample retention program and sample standards procedures, when contractually required for references, comparisons, and other purposes.

(6) Packaging, packing, marking, and shipping requirements, special handling of hazardous or classified material, demilitarization clauses, procedures for use of Government inspection stamps, and other material control requirements.

(7) The contractor's vendor quality control program for supplies and services. This includes all applicable topics discussed in this section and their relationships to vendor control. Other subjects pertaining to this topic may include discussions of subcontractor selection procedures and the techniques of determining that these are acceptable for the contract under consideration.

(8) Review of contractor process and personnel requirements. Where contracts stipulate special manufacturing practices or approvals of operations or equipment, the review of such requirements will be made with the contractor.

g. *Adequacy of Contractor's Quality Control Reporting and Recording Procedures.* Included in this area are requirements for reporting inspection and test findings, maintenance of quality control records, records of incoming material, components, scrap, salvage, and required contractor certifications.

h. *Processing of Engineering Changes and Change Orders.* QAR guidance in this area is provided in section VII of this manual.

i. *Major QA Problem Areas and Other Appropriate Topics.* QARs will discuss other QA topics such as contractor quality history and customer complaint problems that require current resolution and may affect material under contract. Every effort should be exercised to prevent recurrence of previous quality problem.

j. *Government Facilities at the Contractor's Plant.* A discussion of the contractor's obligation to provide the Government with adequate facilities to perform QA functions may include but not necessarily be limited to the following:

(1) Appropriate space and facilities for performance of Government inspection and administrative functions.

(2) Availability of contractor schedules for testing, inspection, production, and delivery in order to facilitate Government planning and implementation of PQA procedures.

3–106—CONFLICTS, AMBIGUITIES, NONCOMPLIANCE, AND OTHER PROBLEM AREAS. The following conditions encountered during postaward orientation conferences shall be documented and referred to the PCO or the ACO as determined necessary for clarification and decision as expeditiously as possible:

a. An ambiguity or difference of opinion exists between the contractor and Government QA attendees concerning one or more contractual requirements; also, Government or contractor obligations related thereto.

b. When essential information required as a basis for inspection/acceptance or shipment is incorrect, imcomplete, unclear, or unavailable.

c. When appropriate, the QAR will submit a DD Form 1716, a DD Form 1426, and/or related correspondence in order to improve contract data packages.

3–107—DOCUMENTING POSTAWARD CONFERENCES. Postaward orientation conference discussions, agreements, decisions, action items, and other conference minutes will be documented and proper distribution will be made to all elements concerned. The purchasing office, regardless of their participation, shall be provided a copy of the QA postaward conference record by QA personnel. The record will, however, indicate whether the technical activity did participate and if an invitation had been extended. Normally, such information will be recorded in DD Form 1484.

3–108—POSTAWARD ACTION ITEMS

a. Action items resulting from postaward orientation conferences will clearly specify the individual(s) responsible for initiation, staff and final action. The QAR member of the Government postaward orientation conference will maintain surveillance of all QA actions required as a result of the conference.

b. In addition, the QAR will report any QA action not completed by the established target date to the applicable QA element through channels.

3–109—REQUESTING ASSISTANCE

a. The QAR is responsible for requesting the necessary assistance to participate in postaward orientation conferences to clarify issues, to determine agenda topics, or to expedite actions pertaining to all QA aspects of postaward orientation conferences. QARs may refer certain matters directly to the PCO, technical activities, or program managers where there is an urgent requirement to expedite matters; however, these actions will be documented and a copy furnished to the ACO.

b. The QAR is responsible for requesting assistance on nonquality related subjects from the ap-

propriate elements within the CAO.

3–110—QA POSTAWARD CONFERENCE. In addition to the requirements for a postaward orientation conference specified in the preceding paragraphs, a separate quality assurance postaward conference will be held if considered appropriate as set forth in paragraph 3-102. This conference, while similar to the postaward orientation conference, differs somewhat in that it is limited solely to quality. The main thrust is directed toward ensuring that nothing in the quality area is left open to assumption or misinterpretation.

a. The QAR is responsible for arranging and conducting the QA postaward conference. Participation will normally include the contractor, CAO technical specialist(s), and PCO technical activity QA personnel. A conference may be requested by the contractor or PCO personnel. In this event, the QAR will fully cooperate to assure that a conference is held as expeditiously as possible.

b. The subjects discussed during QA postaward conferences will include, but not necessarily be limited to, those suggested for postaward orientation conferences. All agenda items proposed by the contractor and PCO personnel will be thoroughly discussed during the conference.

c. The procedures for planning, agenda items, conflicts, documentation, action items, and requesting staff assistance will be followed for QA postaward conferences.

d. Participants who are without authority to bind the Government contractually shall not take action which in any way alters the provisions of the contract. Information and guidance given merely to explain existing provisions and requirements of the contract may, however, be given, but only by participants acting within the scope of their authority.

e. The prime contractor is generally responsible for conducting any necessary postaward orientation conferences with subcontractors. However, in exceptional cases involving subcontracted items or services of technical complexity, the prime contractor may invite the participation of the Government in such conferences or the Government may request the prime contractor to initiate such a conference with the subcontractor. Government participants shall not give commitments, directions, or take any actions which change or are inconsistent with the provisions of the subcontract.

SECTION IV

BASIC QUALITY ASSURANCE PROGRAM

PART 1

CONCEPTS AND PLANNING

4–100—PURPOSE. To establish general concepts of operation and to implement ASPR section XIV, part 4, which establishes requirements for planning an effective plant-level Government QA program.

4–101—CONCEPTS OF OPERATION

a. The contractor is responsible for carrying out his obligations as set forth in the terms and conditions of the contract and in the applicable specifications. Most DoD contracts include, or reference, standard requirements, such as those in general provisions, special clauses for an inspection system or quality program, and performance and product specification requirements. The contractor is responsible for controlling product quality and for offering to the Government for acceptance only those supplies and services that conform to contract requirements and, when required, for maintaining and furnishing substantiating evidence of this conformance.

b. The Government shall determine the type and extent of Government PQA actions required, based upon the particular procurement.

c. Plant-level Government QA personnel must plan for and apply those PQA actions necessary to assure that supplies and services, to be paid for following the signing of the acceptance document, conform to contract requirements. The imposition of controls on contractor's management by documents, such as MIL-Q-9858A, do not in any manner relieve Government QA personnel of this responsibility. These management controls, and documentation resulting therefrom, are designed to permit flexibility in the methods and intensity of Government QA actions. The basic PQA program is designed to prove whether the documentation and controls are adequate and accurate. Proof of this adequacy and accuracy must be reflected in Government records required to be developed and maintained by this manual. These records must reflect whether the contractor is submitting nonconforming supplies or failing to provide objective quality evidence required by contract. The Government can refuse to accept supplies and services, if either condition exists.

d. It is essential that effective communications be established to advise the CAO, PO, and technical activity when required PQA actions cannot be accomplished. It is equally important for plant-level Government records to reflect reasons why the required PQA actions could not be performed including nonavailability of the required skill for performing the particular PQA function.

e. The QAR will normally request or receive instructions from the PCO or technical activity relative to contract requirements or PQA actions via the ACO. In order to prevent misinterpretation, constructive changes to contracts or inappropriate Government actions the QAR shall not follow verbal instructions received through channels outside of the CAO. All such instructions must be formally documented by letter, message or contractual instrument. If the QAR is requested to follow verbal instructions due to urgency, the PCO or technical activity shall be advised to process the request through the ACO, who will inform the QAR of actions to be taken.

4–102—GENERAL PLANNING REQUIREMENTS

a. The objective of planning is to take into account all the factors involved so that no influence will be overlooked in deciding how the Government can most effectively and economically perform the

PQA function. On all except noncomplex procurements involving only end item product inspection where critical application is not indicated, a record is required of the results of the planning effort. This record, which may range from simple notation or completion of DD Form 1904, to a detailed and voluminous plan, constitutes the PQA plan. The depth to which the plan is developed depends on the range and intensity of actions considered necessary at the time the plan is developed. Because of the nature of the PQA function, any plan must be considered as susceptible to rapid adjustment, expansion, or contraction to accommodate changing or unanticipated conditions or factors which may have been overlooked.

b. Planning shall be initiated upon receipt of the contractual document. Where applicable, the plan may be developed on a facility wide basis, however, it shall incorporate sufficient flexibility to accommodate individual contract requirements. As new or follow-on contracts are received that contain additional or different requirements, the plan shall be adjusted accordingly. When the QAR establishes a facility wide plan for a given contract quality requirement, e.g., MIL-Q-9858A, additional contracts received which contain less stringent requirements such as MIL-I-45208A are covered by this plan except for those additional or different requirements contained in the contracts. The facility wide plan shall be used by the QAR to evaluate contractor compliance with all contracts containing identical and lesser requirements simultaneously thus reducing the workload for individual contracts.

c. The PQA plan shall be dynamic and shall be designed to accommodate the particular facility involved, taking into consideration the contract(s), commodity(ies), product(s), the method(s) of manufacture to be employed, and required responsiveness to the purchasing office system program manager. The plan shall encompass all of the PQA actions required to assure: that the contractor has satisfactorily discharged his responsibility for quality; that supplies and services conform to contract requirements; and that only supplies of the requisite quality are accepted by the Government. The extent and detail of such planning will vary based on the contract quality requirements placed on the contractor, the purchasing office inspection requirements placed on the contract administration office, and, where applicable, the contractor quality program/inspection system already in existence in the facility.

d. Development of a PQA plan for MIL-I-45208A and MIL-Q-9858A type requirements requires a plant layout together with a flow chart, if available, of materials, inspection points, and other information. This will provide a basis for selection of the methods, techniques, and procedures employed by the contractor in controlling quality, including product inspection, which will be verified by the Government. Where there are multiple product lines, the plan shall be responsive to the situation in each product line.

e. The QAR shall, as a minimum, consider the applicable actions described in this part. Individual actions may vary in the degree of detail dependent upon the contract, facility, or instructions from the purchasing office, technical activity, system or program manager.

4–103—PARALLELING CONTRACTOR QUALITY PLANNING. Normally, the QAR's day-to-day contact will be with the contractor's QA manager or an equivalent member of the contractor's staff. It is important, however, that the company plant manager understands from the beginning the importance of adherence to the technical and quality provisions of the contract. The plant manager will be contacted on the initial visit to the facility, and frequent status meetings shall be held thereafter. Records shall be maintained of pertinent points discussed. The QAR must explain that the Government will look to the highest level of the contractor's organization to assure that only supplies which meet contract terms are presented to the Government and that contractor corrective action is prompt and responsive when product or system deficiencies are revealed.

a. The extent and detail of the contractor's quality planning will normally vary depending upon the contract quality requirements. The QAR, therefore, must be thoroughly familiar with the products, processes, and manufacturing cycle in order to de-

velop his PQA plan.

b. The QAR shall review the contractor's quality planning, normally prior to the start of production, to assure that all contractual requirements are provided for and that compatibility exists between the contract, the contractor's plan, and the PQA plan. Although the PQA plan is based substantially on the contractor's plan for controlling quality, such a relationship is valid only when it has been determined that the contractor's plan is adequate for control of the contractual requirements.

c. The PQA plan shall in general provide for an initial and continuing evaluation of the contractor's quality operations including manufacturing and/or process controls with sufficient Government product inspection to assure the acceptance of a quality product. The preparation of the PQA plan may parallel the development of the contractor's quality planning. The plan shall provide for verifying selected applicable manufacturing methods, techniques, and procedures employed by the contractor in controlling quality, including product inspection.

d. During the course of the contractor's performance under the contract(s), the QAR should remain alert to changes or conditions which could have an adverse impact on the quality program. Accordingly, PQA program adjustments must be made to compensate for adverse conditions. The following types of changes or conditions could affect the quality status of an area over which the QAR has already established a certain degree of confidence.

(1) The introduction of new production or inspection equipment may result in excessive reliance by company personnel on the "published" capabilities of this equipment.

(2) Uncomfortable working conditions resulting from a prolonged breakdown of air conditioning or heating equipment may impact on product quality.

(3) Significant increases in company workload or production rates could tax the effectiveness of the existing workforce.

(4) Changes in, or absence of, company personnel can have an adverse impact on quality. An example would be a newly hired company inspector, or strike.

(5) Changes in company incentive techniques could alter effectiveness. For example, placing hourly employees on piecework can result in a sudden deterioration of product quality.

(6) Inability of a contractor to meet payrolls.

(7) Change in source for purchased material.

(8) Change in process techniques.

4–104—PLANNING FOR RESEARCH AND DEVELOPMENT (R&D) AND SYSTEM/PROGRAM MANAGED ITEMS. Certain types of contracts, such as R&D, do not lend themselves to across the board application of the requirements contained in this manual. Therefore, the QAR must exhibit considerable judgement in establishing a program to effectively accomplish the PQA mission. The facility PQA plan will be a progressive plan that evolves as the product is developed. During the R&D phase of the life cycle of the system, the plan will be oriented toward those actions that contribute to quality during that specific phase of the life cycle. Since many components will be in various phases of development during the R&D phase of the life cycle, the plan will recognize the development phase of the life cycle. Facility level QA plans will emphasize the quality and use of contractor written quality procedures, when required by contract, and use those instructions as the primary method of recording government observations to the extent practicable in order to reduce the need for separate, voluminous Government records. During the phase of the life cycle where contractor quality data is being generated, the plan will use both Government and contractor quality data as a point of departure for adjusting Government PQA actions. Analysis of the contractor's planning and written quality procedures will be another predominant point of departure in building the facility level PQA plan.

4–105—ADDITIONAL FACTORS TO CONSIDER IN PLANNING

a. *Preaward Survey.* The QAR shall review and analyze the preaward survey results pertaining to the adequacy of the contractor's facilities and potential capability to comply with the quality provisions of the contract. Specific attention shall be directed to those areas reported deficient during the

survey and where the contractor had indicated his intention to correct or improve his facilities or capabilities in the event of award.

b. *Postaward conference.* When it is determined after contract award that the contractor does not or may not have a clear understanding of the quality requirements of the contract, it is essential that postaward orientation action be initiated to clarify contract requirements and resolve misunderstandings. Such determination may result from the QAR's review of the procurement data package, the contractor's plan for complying with contract quality requirements, or the request for a postaward conference may be initiated by the PCO or ACO.

c. *Quality Surveys.* There are various types of Government surveys of a contractor's operation. When available, the results of these surveys shall be considered individually and collectively by the QAR when developing his PQA plan. Results of such surveys and product-oriented visits made subsequent to implementation of the plan may provide basis for adjustment.

d. *Contractor Quality History.* Knowledge of the past performance of a contractor on previous Government contracts is essential to adequate planning. Available data which reflect the contractor's past performance shall be reviewed by the QAR. Typical sources of such information are: records relative to previous contracts; results of previous evaluations of the contractor's quality program/inspection system; feedback data (materiel deficiency reports and reports of their investigation); records of rejection or other unsatisfactory conditions; the contractor's past quality performance; and information furnished by the PO.

e. *Specialized Inspection Requirements.* There are occasions when special tests (ballistic testing of ammunition, unusual environmental tests, and so forth) are contractually specified. Normally, these types of tests necessitate the use of specialized test equipment or facilities not ordinarily available at supplier's plants. Accordingly, the special tests may be conducted by other than the prime contractor; e.g., Government laboratories, proving grounds, arsenals, or test centers. In such instances, the QAR has the same basic responsibility of assuring that the items meet designated contractual requirements prior to release for shipment as he does for other items. Further, the QAR must often select the item(s) to be tested and coordinate the shipping to the specified facility. Findings derived from such tests are usually fed back to the contractor and the QAR and may necessitate revision of the contractor's production methods and quality control procedures, and therefore adjustment of the Government PQA plan may be appropriate. The QAR shall make provisions in his PQA plan for the accomplishment of actions related to these types of tests.

f. *Inspection Equipment.* The QAR shall review the contract and related documents to determine contractor and Government quality requirements and responsibilities for providing and calibrating measurement and test equipment. This review shall determine the need for special equipment and the extent of capability required by the contractor. The QAR shall, in his PQA plan, provide for an initial review of required measuring and testing equipment, including Government-furnished test equipment and gages for Government use, and for the conduct of verification checks to determine the adequacy and accuracy of the equipment as well as the adequacy of contractor controls established for the equipment.

g. *First Article Approval.* First article approval includes testing and evaluation of pre-production models, initial production samples, test samples, first lots, pilot models, pilot lots. These tests are normally performed before or in the initial stages of production for the purpose of assuring conformance to contract technical requirements. The extent of QAR participation in first article approval will be as prescribed in this manual (section VI) and includes any special requirements of the contract, specification, or instructions from the PO. The purpose of first article approval is to demonstrate the suppliers capability to produce an item that conforms to contract requirements.

h. *Special Type Process Control.* Certain Government specifications, when contractually invoked, require Government approval of the contractor's ability to conform to process control and the conduct of specified tests using personnel or equipment meeting special qualifications. The PQA plan must include procedures for assuring that Government

certified or approved processes, test methods, personnel, and equipment continue to meet those special requirements. Contractually required certifications and approvals by the Government, while indicating that the supplier is capable of doing a satisfactory job of applying process control or nondestructive test methods do not in themselves assure that he will continue to do so. Other processes, not subject to certification or Government approval, must also be considered and included in planning.

4–106—MANPOWER PLANNING

a. Proper administration and execution of the PQA function requires that all responsible activities provide for, and make the best use of resources available to them within the time frame available. In the broad sense, these resources are people, money, and equipment.

b. The QAR is responsible for scheduling the number of Government personnel and the types of skills required to perform the PQA function on a given contract or at a contractor's plant.

c. Manpower and skill requirements should be geared to the tasks to be accomplished and phase of production as derived from contract or purchasing office requirements and the QAR's PQA plan. Rarely, if ever, should the opposite approach be taken; i.e., development of the PQA plan based on the resources available, except as an interim measure.

d. Changes in manpower and skill requirements should be documented in detail. In addition, those actions that cannot be accomplished as well as the impact on operations, if sufficient manpower and skills are not assigned should be clearly identified. Local procedures and channels will be followed in making resource requirements known at the proper organizational level having the authority to provide the required resources. The purchasing office shall be advised, through channels, and a recommended solution proposed, when all manpower sources have been exhausted and shortages still exist.

e. When the required skills can be obtained through training of available personnel, the contract administration office should be advised of training requirements and asked to make arrangements through proper channels for such training.

f. There may be occasions when professional level skills (*e.g.*, engineers, chemists and so forth) are required or would assist the QAR in a particular action such as evaluating or analyzing special processes or operations and investigating deficiencies and the technical knowledge required is beyond that normally expected of the QAR. If not available at plant level, they should be requested through appropriate channels.

4–107—PLANNING FOR PQA SUPPORT AT SUBCONTRACTOR'S PLANTS. Planning shall provide for a review, at an early state, of the contractor's plans for purchase of materials, components and other requirements making up the contract end item and spare parts. In reviewing these plans it must be recognized that it is solely the responsibility of the prime contractor to control his sub-contractors and suppliers. Lack of control which could result in shipment of material which does not conform to contract requirements is cause to request corrective action. PQA actions at subcontract level are limited to specific conditions contained in section V, part 1, and are not intended to supplement or replace prime contractor control. PQA at subcontract level shall not be requested when quality characteristics can be verified at the prime contractor facility prior to acceptance.

4–108—QAR REVIEW OF CONTRACT REQUIREMENTS. In order to properly plan for the performance of the PQA function, it is essential that the QAR be knowledgeable of the individual requirements of each contract; therefore, each contract and related document shall be thoroughly reviewed upon receipt to ascertain actions necessary to assure contractor compliance to quality requirements. If conditions arise where the contract will require delivery before the QAR's copy of the contract has been received through Government channels, the contractor's copy of the contract is authorized for use.

4–109—PROCUREMENT DATA PACKAGE IMPROVEMENT PROGRAM. ASPR 14-203(b) requires the QAR to document any observed deficiencies in design or technical requirements, includ-

ing contract quality requirements, and report them to the purchasing office. DD Form 1716, will be used for this purpose and will be forwarded to the PCO via the ACO when such deficiencies are noted. This is an important phase of PQA planning since it is imperative that procurement data packages and specifications are clear, adequate and complete for proper PQA performance. Particular attention should be paid to contract quality requirements to assure that they are appropriate for the items being procured.

4-110—PLANNING FOR EVALUATION AND VERIFICATION OF CONTRACTOR CONTROL OF PRODUCT

a. Drawings, specifications, manufacturing build documents, and other technical documents shall be used as the source documents to review those characteristics which are controlled by the contractor, including workmanship.

b. The QAR shall review the methods the contractor uses for controlling each characteristic identified. Contractors generally utilize the following methods in controlling the characteristics:

(1) Inspection and testing of the specific characteristic. This does not include redundant inspection or test characteristics established by the contractor for control, economic or other purposes.

(2) Control of the characteristic by the production process or further assembly. Examples of this method are:

(a) Inspection and testing at the first level of assembly which will reveal defective parts in the assembly.

(b) Testing of higher level assemblies which will adequately determine the functionability and interchangeability of the subassemblies.

(c) Further assembly operations which will reveal improperly formed parts or improperly drilled holes.

(3) Control of the characteristic by controlling the production equipment or device used in manufacturing. Examples of characteristics controlled in this manner are:

(a) Length of wire in a harness when the harness has been constructed on a jig, wiring board or fixture.

(b) Location of holes and brackets when templates are used.

(c) Characteristics inspected or tested by automated equipment.

c. The QAR shall then determine the method for performing Government evaluation or verification of those characteristics previously identified. The following methods are available depending on the contractor's method for controlling the characteristic:

(1) For those characteristics which are controlled by inspection or testing of the specific characteristic, Government verification will be by inspection or testing in accordance with section IV, part 4, PVI.

(2) For those characteristics which are controlled by production processes or further assembly, and production equipment or devices used in manufacturing, PE will be utilized in accordance with section IV, part 3.

4-111—STANDARD INSPECTION CLAUSE (SF32) PQA GUIDANCE

a. *Purpose & Scope.* To provide guidance to the QAR for implementing the PQA Program when the contract specifies the Standard Inspection Clause as the quality requirement for fixed price supply contracts. There are two basic methods of including the requirements of a standard inspection clause in a contract:

(1) Inclusion or incorporation by reference of an appropriate ASPR VII clause, e.g., ASPR 7-103.5 (fixed price contract).

(2) Inclusion or incorporation by reference of general provisions, e.g., Standard Form 32.

b. *General.* The standard inspection clause requires the contractor to have an inspection system acceptable to the Government and may be used alone or in conjunction with other contractual quality requirements. The standard inspection clause will appear in nearly all contracts, therefore, the QAR must be capable of recognizing the PQA tools at his disposal and the proper application when the contract contains only a standard inspection clause.

c. *Acceptable Inspection System*

(1) In general terms, an inspection system acceptable to the Government should produce evi-

dence of control over those functions that are directly related to the product being procured and provide for:

(a) Government inspection of supplies/services.

(b) Identification and control of defective/rejected supplies.

(c) Sufficient inspection and records to assure compliance to contract requirements.

(d) When required, procedures that are clear, concise and adequate for contract requirements.

(2) The acceptability of a contractor's system will be determined on a contract by contract basis and will consider product quality history, complexity, application and technical description of the item, special contract provisions, effectiveness of manufacturing processes, and whether the supplies are in stock or must be produced for the subject procurements.

(3) The QAR should not expect or require more from the contractor than is required by contract. The contractor is expected to maintain an effective and economical inspection system that will assure the acceptability of supplies and services under the contract, but not to the extent of a quality program or inspection system defined by a military specification. In many cases inspection of the end item alone will provide the necessary evidence that the product conforms to contract requirements.

d. *Procedures.* The basic PQA functions for contracts which contain only the standard inspection clause will consist of Planning, PVI, and CA. The provision, in itself, does not require contractor written procedures, therefore, PR and PE as described in parts 2 and 3 of this section are not usually applicable. However, this does not exclude the possibility that Procedures Review and Procedures Evaluation may be appropriate for other special provisions/specifications of the contract. In addition, other PQA functions may become necessary by contract, e.g., First Article Inspection, Control of Nonconforming Supplies. When the QAR is involved in these functions, he should follow the guidance of contract documents and this manual, and request technical or supervisory assistance as necessary.

(1) *Planning.* PQA shall be conducted in accordance with procedures contained in this manual. Items on contracts containing only a standard inspection clause will normally meet the exception for preparing DD Form 1904 (noncomplex item without critical application involving only end item inspection). The QAR should always be alert for situations where in-process control would be required because of a special contract provision or specification requirement such as heat treat, plating, welding. This type of provision should be evaluated for written procedure requirements; and if applicable, PR/PE should be implemented to the extent required by that specific provision. Again, an acceptable system should produce evidence that those functions directly related to product conformance are being controlled. Therefore, each contract specifying the standard inspection clause as the contract quality requirement should be reviewed on an individual basis to determine the extent of the contractor's responsibility.

(2) *Product Verification Inspection (PVI).* Prior to performing PVI the QAR shall first determine: Availability and adequacy of inspection criteria (drawings, specifications, instructions); inspection equipment used by the contractor and offered for use by the government is adequate to measure and/or test applicable parameters to determine conformance/nonconformance; inspections, tests, and other actions taken by the contractor relative to product quality (e.g. waiver, deviation) are properly documented. PVI will normally be an independent inspection of the completed item to the degree necessary to assure product conformance to contract requirements. This will be accomplished and recorded in accordance with part 4 of this section. The degree of PVI application will vary based on factors such as: criticality, complexity, supplies peculiar to Government application, and whether procurement is to a commercial, Military/Federal specification or a combination of these. For example:

(a) Where the item is non complex, the QAR will normally perform end item inspection (PVI) only. An appropriate sampling plan will be used to determine product acceptability.

(b) Where a complex item is involved the QAR may have a need to perform some in-process inspection. The QAR may consider each step in the

manufacturing or hold areas as a potential CIP. Inspections will be performed in accordance with appropriate sampling plans. For a complex procurement the QAR should plan more carefully than for a simple item. He must determine the approximate schedule for events he wishes to monitor and inform the contractor of his intentions.

(c) When off-the-shelf items are encountered, the provisions of paragraph 4-405 will be implemented.

(3) *Corrective Action.* Corrective action requirements are normally based upon rejection of material presented for acceptance. Rejection of an inordinate number of sample units/lots (larger than expected through sampling risks) should be considered sufficient evidence of an unacceptable contractor inspection system. Either condition constitutes a basis for appropriate corrective action in accordance with part 5 of this section.

(4) *PR/PE*

(a) PR will be applicable whenever contractor written quality or inspection system procedures are required to control quality. The requirement for written procedures is established by the contract or associated specifications, e.g., specific contract requirements (which may require a calibration or other type procedure), or material process specifications (such as plating magnaflux).

(b) When applicable, PR and PE will be performed in accordance with parts 2 and 3 of this section. PE checklists should be brief and to the point while providing a reasonable level of confidence in the contractor's activities. The frequency of evaluations will be predicated on product quality, complexity, duration of procurement, and the point in the cycle of manufacturing when they are to be utilized. Where required procedures are either not available or not acceptable, the QAR shall initiate appropriate corrective action.

e. Determination of Completeness of Records. Records are considered objective evidence that the required inspection of supplies has been performed and that supplies conform to contract requirements. Records of all inspection work by the contractor shall be kept complete and available to the Government. The format of a contractor's record is optional and is usually of his own design. For example he may use statements of quality, route tickets, process sheets, or list the actual inspection results with the number of items inspected and number accepted. In the evaluation of contractor inspection records the QAR's prime criteria will be to determine whether end item records reflect that the contractor has in fact performed all inspections required by contract. The extent of record verification by the QAR may vary with each procurement. Records of raw materials, purchased components and subassemblies may not be considered necessary for simple items, but may be necessary for more complex procurements.

f. *Measuring and Test Equipment.* All inspection devices employed by the contractor to demonstrate conformance with contract requirements must be capable of providing valid measurement data. The QAR's review of the contractor's method of control of Measuring and Test Equipment will be based on the characteristics essential to the control of product. Evaluation by the QAR may be accomplished at the time product is available for inspection if no undue delay to the contractor occurs. In most cases, adequacy or suitability of measuring and test equipment being used can be readily determined by the QAR. Examples of evidence of the accuracy of this equipment which may be provided by the contractor are: Comparison with standards of known accuracy and; certification from an accredited laboratory. If calibration procedures are either specified by contract or referenced by a specification such as MIL-C-45662A, such procedures must be available to the Government for PR and PE.

g. *Quality Data Evaluation.* Much of the quality data available for evaluation on contracts containing only the standard inspection clause may be reviewed at the time of PQA performance. On simple procurements where the contract requires one or only several shipments data evaluation would consist of a review of contractor and Government inspection results and reports of user experience for product acceptance. Where the duration of the contract is longer or the item is complex (requiring in-process inspections or PE) more extensive evaluations would be appropriate. Instructions for collection, evaluation, and use of quality data are provided in section IX, part 1.

h. *Providing Guidance to Contractors.* The QAR who administers the quality portion of a contract containing only the standard inspection clause should make a special effort to be sure that the contractor realizes his responsibilities regarding Government inspection and test activities in his plant. On the initial visit the QAR shall meet with plant management (paragraph 4-103) and, if necessary, explain intended Government activities. Rights and responsibilities of both parties must be understood immediately so as not to cause delay in delivery to the receiving activity. During this, and perhaps subsequent meetings, the QAR should ascertain whether or not the contractor understands contract quality requirements and

(1) Advise him as to where and how he may obtain Government standards, specifications, and so forth.

(2) Assist in the interpretation of contract Technical Requirements, specifications, such as First Article Inspection, environmental tests.

(3) Provide guidance as to the format of inspection documentation required by contract.

(4) Apprise him of the CAO Organization and contacts such as: ACO; Payment Office; Distribution Point for forms (e.g. Government Bill of Lading, DD Form 250); and others as may be required.

(5) Assist him in preparing and distributing DD Forms 250.

i. *Contractor Facilities and Assistance to QAR.* The standard inspection clause when included in a contract, is an agreement that the contractor without additional charge shall provide all reasonable facilities and assistance for the safety and convenience of the Government inspectors in the performance of their duties. What is reasonable will be determined on a case by case basis for the minimum essentials necessary for PQA actions. In some situations the QAR may only need the short time use of a table or desk somewhere in the facility. In other situations he may need assigned desk space and/or inspection space. This clause requires the contractor to provide, as necessary, equipment and/or personnel to perform inspection and test required by the Government to determine product conformance and contractor compliance to contract requirements.

j. *ASPR 7-103.5(a) Inspection (SF 32, paragraph 5).* The standard inspection clause used in fixed price supply contracts is reproduced for convenience of the QAR. (Shown below.)

4–112—DD FORM 1904, CONTRACT REVIEW AND PLANNING DOCUMENT

a. *General*

(1) This form will be used to document the review of all DoD contracts except those for noncomplex items involving only end item product inspection where critical application is not indicated.

(2) A BOA is not a contract and generally does not require preparation of DD Form 1904. This form is required for all orders received against the BOA which meet the criteria above. In unusual circumstances where there are a significant number of repetitive orders against a BOA, the QAR should use discretion in preparing DD Form 1904. It may be more desirable to prepare one form for the BOA or the first order against it, but it is essential that each order is reviewed to determine scope of work, price, delivery, peculiar requirements, and so forth. Modification of the BOA may require preparation of a new form.

(3) The form will be used to document the review of all subcontracts when there is no specific and detailed guidance provided by the QA element requesting PQA at the subcontractor level as to the type and extent of QA support required.

(4) This form will be used to document the review of all NASA delegations and redelegations.

(5) The form will also be used to notify the responsible CAO technical activity of specific contract clauses. This will be accomplished by completing the appropriate blocks or entering the specific clause title and contract location in the remarks block, and forwarding a copy to the appropriate CAO element. The following contract clauses are applicable to this requirement:

(a) First Article.

(b) Flight Risks (ASPR 7-204.21).

(c) Ground and Flight Risk (ASPR 7-104.10).

(d) Reliability and Maintainability.

(e) Safety Precautions for Ammunition and Explosives (ASPR 7-104.79).

(f) Notice of Radio Active Material (ASPR 7-104.80).

(g) Aircraft Missiles and Space Vehicles Accident Reporting and Investigation (ASPR 71-104.81).

(h) Accident Prevention (ASPR 7-602.42(c)).

(i) Airfield Safety Precaution (ASPR 7-603.49).

INSPECTION (1958 MAY)

(a) All supplies (which term throughout this clause includes without limitation raw materials, components, intermediate assemblies, and end products) shall be subject to inspection and test by the Government, to the extent practicable at all times and places including the period of manufacture, and in any event prior to acceptance.

(b) In case any supplies or lots of supplies are defective in material or workmanship or otherwise not in conformity with the requirements of this contract, the Government shall have the right either to reject them (with or without instructions as to their disposition) or to require their correction. Supplies or lots of supplies which have been rejected or required to be corrected shall be removed or, if permitted or required by the Contracting Officer, corrected in place by and at the expense of the Contractor promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If the Contractor fails promptly to remove such supplies or lots of supplies which are required to be removed or promptly to replace or correct such supplies or lots of supplies, the Government either (i) may by contract or otherwise replace or correct such supplies and charge to the Contractor the cost occasioned the Government thereby; or (ii) may terminate this contract for default as provided in the clause of this contract entitled "Default." Unless the Contractor corrects or replaces such supplies within the delivery schedule, the Contracting Officer may require the delivery of such supplies at a reduction in price which is equitable under the circumstances. Failure to agree to such reduction of price shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes".

(c) If any inspection or test is made by the Government on the premises of the Contractor or a subcontractor, the Contractor without additional charge shall provide all reasonable facilities and assistance for the safety and convenience of the Government inspectors in the performance of their duties. If Government inspection or test is made at a point other than the premises of the Contractor or a subcontractor, it shall be at the expense of the Government except as otherwise provided in this contract; *provided*, that in case of rejection the Government shall not be liable for any reduction in value of samples used in connection with such inspection or test. All inspections and tests by the Government shall be performed in such a manner as not to unduly delay the work. The Government reserves the right to charge to the Contractor any additional cost of Government inspection and test when supplies are not ready at the time such inspection and test is requested by the Contractor or when reinspection or retest is necessitated by prior rejection. Acceptance or rejection of the supplies shall be made as promptly as practicable after delivery, except as otherwise provided in this contract; but failure to inspect and accept or reject supplies shall neither relieve the Contractor from responsibility for such supplies as are not in accordance with the contract requirements nor impose liability on the Government therefor.

(d) The inspection and test by the Government of any supplies or lots thereof does not relieve the Contractor from any responsibility regarding defects or other failures to meet the contract requirements which may be discovered prior to acceptance. Except as otherwise provided in this contract, acceptance shall be conclusive except as regards latent defects, fraud, or such gross mistakes as amount to fraud.

(e) The Contractor shall provide and maintain an inspection system acceptable to the Government covering the supplies hereunder. Records of all inspection work by the Contractor shall be kept complete and available to the Government during the performance of this contract and for such longer period as may be specified elsewhere in this contract.

(End of clause)

b. DD Form 1904, will be completed as follows:

(1) *Block 1. Contractor's Name and Address.* Enter name and address of prime contractor.

(2) *Block 1a. Subcontractor's Name and Address and Zip Code.* Enter name and address of subcontractor if applicable.

(3) *Block 2. Prime Contract Number.* Enter number of prime contract.

(4) *Block 2a. Subcontract Number.* Enter number of subcontract if applicable.

(5) *Block 3. Data Proc Doc Received by QAR.* Enter the date the procurement document(s) is received by the QAR.

(6) *Block 4. Item Description.* Enter a general description of the line items being procured (including program designation where applicable) and, for NASA delegations, the abbreviated hardware designation from NHB 5300.4(2B) paragraph 3B104-3.

(7) *Block 5. QAR or Specialist Name.* Enter the name of the assigned QAR or specialist.

(8) *Block 5a. Tel. No.* Enter the telephone number of the assigned QAR or specialist.

(9) *Block 5b. Name and Location of Activity.* Enter the name and location of the CAO responsible for performance of PQA.

(10) *Block 6. QAR or Specialists First Level Supervisor.* Enter the name of the QAR's or specialist's first level supervisor. (NASA only)

(11) *Block 6a. Tel. No.* Enter telephone number of the QAR's or specialist's first level supervisor. (NASA only).

(12) *Block 7. Facility Type/Classif/Program.* Enter facility type, facility classification or facility program when appropriate.

Section I—Shipment Data

(13) *Block 8. Inspection (PQA) Point.* Check applicable block and enter appropriate contract page number.

(14) *Block 9. Acceptance Point.* Check applicable block and enter appropriate contract page number.

(15) *Block 10. FMS/MAP Shipment.* Check applicable block and enter case number if applicable.

(16) *Block 11. Shipment.* Check applicable block. Enter appropriate page number.

(17) *Block 12. Certificate of Conformance.* Check appropriate block after it has been determined in accordance with section IX, part 2 whether the COC is to be used as the sole basis for acceptance or an element incident to acceptance. Enter contract page number.

(18) *Block 13. Variations in Quantity.* Check applicable block. Enter appropriate page number.

(19) *Block 14. Service Codes in Contract.* Check that all the required DODAAD are shown in the contract. (These codes are required for the completion of the DD 250 in accordance with ASPR, appendix I, part 3. Missing DODAAD code requires initiation of a DD Form 1716.)

(20) *Block 15. Initial Delivery Date.* Enter date required by contract/shipping instruction and appropriate contract page number.

(21) *Block 16. Sched Contract Completion Date.* Enter scheduled date contract will be completed.

Section II—QA Requirements

(22) *Block 17-24. QA Requirements.* Check the appropriate block or enter the appropriate specification if block 21 is applicable. Also check block 20 if the contractor is required to develop a QA plan for approval which then becomes contractual. Enter contract page number as appropriate. Make appropriate entry in block 51, remarks, if this is the contractor's first experience with specifications checked in blocks 18-24.

(23) *Block 25. AQL Specified.* Check if the contract or end item specification authorizes the contractor to sample and specify required AQL. Enter Contract or Specification page number as applicable.

(24) *Block 26. QALI Received.* Check applicable block and enter date of any QA Letter of Instruction received.

(25) *Block 27. Is This a NASA Delegation.* Place a check mark in the appropriate block.

(26) *Block 28. Is NASA Redelegation Authorized.* Place check in appropriate blocks to indicate if redelegation is or is not authorized.

(27) *Block 28a. Is NASA Redelegation Approval Required.* Place a check mark in the appropriate block.

(28) *Block 29. Is Technical Training Required?* Place a check mark in appropriate block to indicate whether Technical Training is required for the con-

tract or delegation. Indicate in remarks the type of training needed and whether the training is already scheduled.

(29) *Block 30. Visual Acuity Requirements Exist.* If such a requirement exists, check "yes" and enter under remarks if for example, color blindness or other sight impairments will prohibit effective job performance by the contractor/Government QA personnel.

Section III—Technical Requirements

(30) *Block 31. Reliability/Maintainability.* Check applicable block(s) only when contract specifically calls for a Reliability/Maintainability Program such as required by MIL-STD-785 or MIL-STD-470. Enter contract page number as applicable.

(31) *Block 32. Configuration Management.* Check only when contract specifically requires a formal Configuration Management Program. Enter contract page number as applicable.

(32) *Block 33. Class I or Class II Engineering Changes.* Check only when contract references MIL-STD-480 and/or 481 or specifies other requirements which are to be followed for the submission or approval of engineering changes. Enter contract page number as applicable.

(33) *Block 34. Authority Delegated. Type I Nonconformances.* Check if authority for acceptance of type I nonconforming supplies has been delegated. Enter contract page number as applicable.

(34) *Block 35. Authority. Type II Nonconformance Withheld.* Check if authority for acceptance of type II nonconforming supplies has been withheld by the PO. Enter contract page number as applicable.

(35) *Block 36. First Article Approval Required.* Check if first article approval is required by the contract. Enter contract page number as applicable.

(36) *Block 37. Qualified Product List Requirement.* Check if the contract requires the use of qualified products in the end item. If contractor is a non-QPL producer, determine whether issuance of a DD Form 1716 is appropriate. Enter contract page number as applicable.

(37) *Block 38. Technical Data and Information Required.* Check only when contract calls for deliverable drawings, manuals, instructions, reports, and plans in accordance with DD Form 1423. Enter contract page number as applicable.

(38) *Block 39. GFP Plant Equipment Maintenance Procedures Required.* Check as applicable when the Government Property Clause incorporating ASPR, appendix B is included in the contract. Enter contract page number as applicable.

(39) *Block 40. Safety Precautions Needed for Hazardous or Dangerous Material.* Check if the procurement pertains to material discussed in section II, paragraph 2-103c. Enter contract page number as applicable.

(40) *Block 41. Aircraft Involvement Required.* Check when the contract involves bailed, leased, loaned, modification, PDM or production aircraft and when any other Government aircraft are involved. Enter contract page number as applicable.

(41) *Block 42. Contract Safety Clauses Required.* Check when the contract includes safety clauses. Enter contract page number as applicable.

Section IV—Contract Award Data

(42) *Block 43. Preaward Survey. Information Received.* Indicate yes or no. This concerns results of the preaward survey which should be available to the QAR.

(43) *Block 44. Contractor Commitments Completed.* Check if contractor commitments made at time of preaward survey are complete.

(44) *Block 45. Assistance Required.* Check applicable block. If yes is checked, enter the date the request was submitted. When appropriate, enter in Remarks Block from whom assistance is required, i.e., (technical activity or other functional area).

(45) *Block 46. Assistance Received.* Check applicable Block. This block will in most instances have to be completed during contract performance. It should not be completed at time of contract review if assistance is scheduled for a later date. Enter date assistance was actually received.

(46) *Block 47. Postaward Conference Required.* Indicate if applicable and enter any actions taken to initiate the conference under remarks. Indicate in remarks whether PO participation is desired. Give date of proposed conference.

(47) *Block 48. DD Form 1716 Issued.* Check applicable block. When contracts are found to con-

tain inadequacies such as omission of pertinent requirements, dimensional and numerical errors, ambiguity, inconsistencies or restrictive requirements, DD Form 1716 or DD Form 1426 will be submitted through established channels.

(48) Block 49. Is Status of Suppliers Quality Program or Inspection System Attached. Applicable only to NASA delegations. Information to be included in the status is explained in NHB 5300.4(2B), paragraph 2B201.

(49) Block 50. Elements for Procedures Review and Evaluation. The alphas appearing in these spaces represent the alpha designators for procedural elements contained in section IV, part 2 of this manual. Circle those applicable to the contract or delegation. Check those requiring new or revised contractor procedures.

(50) Block 51. Remarks. Enter any appropriate comments: Progress Payments, Special Requirements, Liquidated Damages, and so forth.

(51) Block 52. Signature. Enter signature of preparer.

(52) Block 53. Date Contract Reviewed. Enter date contract was reviewed.

(53) Block 54. Date Form Prepared. Enter date DD Form 1904 was prepared.

c. Instructions for completing the reverse side of DD Form 1904, Special Requirements:

(1) Column 1. Operation or Special Process. Determine which of the operations or special processes are required by the contract.

(2) Column 2. Applicable Specification Number. Enter specification number applicable to the required operations or processes.

(3) Column 3. Document Reference. Enter contractor document number, page, and paragraph covering the applicable operation or process.

(4) Column 4. Approval, Review or Information. Indicate by entering A, R, or I if the contract requires the operations, special processes, or other documentation be submitted for Approval (A), Review (R), or Information (I).

(5) Column 5. Required Submission Date. Enter date stipulated for submission of the documentation identified in column 4.

(6) Column 6-8. Enter a check mark if the requirement exists pertaining to the operation or process previously identified in column 1.

(7) Column 9. Reports. Identify those agency reports required by the delegation/redelegation/QALI.

(8) Column 10. Report Due Dates. Enter required submittal date for those reports identified in column 9.

d. A copy of this form will be retained in the contract file by the QAR. Distribution for NASA will be in accordance with NHB 5300.4(2B), paragraph 2B201-2a(3).

PART 2

PROCEDURES REVIEW

4-200-PURPOSE. This part implements FAR DoD Supp 46.474 by providing instructions to the QAR for the review of contractor's written quality or inspection procedures.

4-201-APPLICABILITY OF PROCEDURES REVIEW. PR as contained in this part is applicable whenever contractor's written quality or inspection procedures are contractually required to control quality.

4-202-GENERAL REQUIREMENTS

a. The adequacy of contractor's written quality procedures represents one of the most important areas of activity associated with the PQA program. The adequacy of these procedures and the contractor's demonstrated compliance thereto, in conjunction with other PQA elements, enables the QAR to adjust his overall activity.

b. The requirement for the contractor to prepare written quality or inspection procedures is generated by the inclusion of several different contract clauses, by specific requirements contained in the special provisions of the contract, or by materials process specifications.

c. Where individual contracts prescribe various levels of quality or inspection requirements, and the contractor does not elect to apply a single system, the contractor's written quality procedures shall be tailored to fit the individual contract requirements.

d. The contractor is given wide latitude in the development of written quality procedures to implement the requirements for a quality program or inspection system. No specific format is prescribed by the Government nor is it necessary that these procedures be contained in one publication. Unless restricted by individual contract requirements, it may be desirable for the contractor to reflect the required written quality procedures in different publications involving functional organizations in addition to Quality Control; e.g., Engineering, Manufacturing. This generally is where a quality program is prescribed, such as contained in specification MIL-Q-9858A.

e. Relative to the format of contractors' written quality procedures, it is not always necessary nor desirable that they follow, on a subject-by-subject basis, the format of the prescribing specification or other contract reference. There are cases where individual requirements of a general specification such as MIL-Q-9858A may not, in a particular contractor situation, require the preparation of written quality procedures. For example, this specification requires the contractor to report to the Contracting Officer any precision measurement needs exceeding the known state-of-the-art. If it is determined that this condition does not or will not exist, then it serves no purpose for the contractor to include this requirement in his written quality procedures. Where a contractor elects to submit only conforming material to the Government (as opposed to submitting nonconforming material to an MRB or by a Waiver Request for acceptance consideration), it would only be necessary for the procedure to contain a statement to that effect, along with describing the manner in which these materials would be identified, segregated, and dispositioned.

f. The need to tailor contractor's written quality procedures to the individual contract or contractor situation cannot be overemphasized. The underdevelopment or inadequacy of these procedures could have a detrimental effect on the supplies or services required by contract whereas the overdevelopment of these procedures could result in an inefficient operation.

g. Where a review of the contractor's written quality procedures is applicable, this should be accomplished as early as possible in the production cycle. In the event acceptable procedures have not

been made available to the QAR before an operation or activity covered by the procedures is to be placed into effect by the contractor, further Government PQA will not be initiated. The contractor will be advised in writing and the problem immediately escalated to appropriate levels. Some specifications such as MIL-I-45208A, as well as some contracts, such as Clothing and Textile contracts, require that the contractor's procedures be available for review by the QAR prior to the initiation of production. In the case of MIL-Q-9858A, no time frame for submission of the contractor's written quality procedures is contained in the specification; however, these procedures must be completed and made available to the QAR in advance of the time that the operation or activity covered by the procedure is to be placed into effect by the contractor.

h. A formal notice to the contractor of the acceptability of written quality procedures may be used for those procedures developed in compliance with MIL-Q-9858A or MIL-I-45208A. The QAR may advise the contractor as to the acceptability (as opposed to approval) of the procedures. This letter will not normally be initiated until after initial evaluation of the procedures. The QAR's letter will be developed essentially in accordance with the example proposed in DoD Handbook H-50, page 3, paragraph 1.2. The letter may be issued on a facility, contract, or product line basis. The letter should be withdrawn whenever the contractor fails to take corrective action. The letter should state that the procedures are acceptable as of the date of notice but may be subject to later changes as a result of new contracts or experience gained in the use of the procedures.

i. Where the QAR's review indicates that the contractor's written quality procedures will not fulfill the requirements of the contract(s), the QAR's disapproval will be conveyed, in writing, to the contractor as soon as possible.

j. In the event that the contract requires the approval of the contractor's written quality procedures by the PCO, the PCO will take the necessary action in accordance with his procedures. The QAR will furnish comments on proposed procedures to the PCO when he retains approval authority.

k. Where MIL-Q-9858A or MIL-I-45208A is not a requirement of the contract(s), formal notification to the contractor by the QAR as to the acceptability of the contractor's written quality procedures is not required unless specified by the contract. However, the QAR shall advise the contractor in writing in the event the written quality procedures are considered to be inadequate.

l. Where specifications require Government approval of a specific contractor's operation, the QAR will assure that the contractor obtains the required approval. Examples of this type of requirement are:

(1) Certification or qualification approval of personnel, equipment, and processes.

(2) Workmanship samples.

(3) Other special requirements.

m. MIL-I-45208A contains an option that allows the contractor to use the requirements of MIL-Q-9858A in whole or part, whenever MIL-I-45208A is applicable. Where the contractor elects to use this option he should so advise the CAO in writing and reflect in his written quality procedures the portions of MIL-Q-9858A he intends to apply. The QAR shall advise the contractor of the disapproval of those procedures that do not meet the requirements of MIL-I-45208A and require their correction.

4–203—REVIEW CRITERIA

a. The following handbooks should be used as guides in the review of contractor's procedures developed to comply with requirements of the contracts.

(1) DoD H-50, Evaluation of a Contractor's Quality Program.

(2) DoD H-51, Evaluation of a Contractor's Inspection System.

b. When either of the above specifications are required, or when a contract specifies MIL-C-45662A, then DoD Handbook H-52, Evaluation of Contractor's Calibration System should be used to review contractor's written procedures pertaining to Calibration System Requirements.

c. In addition to the general guidance provided by DoD H-50, DoD H-51, and DoD H-52 it is necessary for the QAR to be thoroughly familiar with the contents of the procurement data package, the sup-

plies or services to be furnished under the contract, and the previously demonstrated capability of the contractor in order to make an adequate determination relative to the acceptability of the contractor's written quality procedures. Where a contractor becomes involved in a new type of product or where there is an influx of untrained personnel to be employed in the performance of the contract, it may be necessary for the written quality procedures to be in more detail than would otherwise be required.

d. The QAR must recognize, particularly in contracts involving complex products or processes, that the contractor's written quality procedures will cover a wide range of technical and procedural requirements and that the QAR may not possess the full range of technical knowledge that would be required to conduct a thorough evaluation. For this reason, the QAR in close coordination with the supervisor, shall identify those situations where technical specialists or PCO representative should be requested to provide assistance in the evaluation of the contractor's written procedures.

e. The QAR will inform the contractor of inadequate procedures in writing, but should never tell the contractor "how" to do the job. The QAR will state facts and indicate where the procedures fail to satisfy contractual requirements. Several reasons exist for not telling the contractor how to do the job. First and foremost is the hazard of having a contractor follow a QAR's instruction only to find later that it fails to satisfy the need. The contractor will then have reason to include the Government in the blame for his failure. A second case is where a QAR has observed a particular method or operation at another plant and advises the contractor of this observation. This may fall into the industrial secrets category.

f. Where a contractor does not develop written quality procedures as required by the contract or where a contractor fails to effect the necessary changes to correct inadequacies reported to the contractor, the QAR shall initiate method C or D corrective action in accordance with part 5 of this section.

4–204—TIMELY REVIEW OF CONTRACTOR'S WRITTEN QUALITY PROCEDURES.

Recognizing the importance of the contractor's written quality procedures, it is incumbent upon the QAR to review the contractor's procedures in a timely manner so as not to unduly delay the contractor's contract performance. This review may be accomplished on an incremental basis. It is not limited to newly developed procedures, but includes subsequent revisions and changes.

4–205—EVIDENCE OF REVIEW OF CONTRACTOR'S WRITTEN QUALITY PROCEDURES. Review of the required written quality procedures is evidenced in the records called for in part 3 of this section relative to PE.

4–206—IDENTIFICATION OF PROCEDURAL ELEMENTS

a. The following list sets forth the procedural elements that are generally applicable when specifications such as MIL-Q-9858A or MIL-I-45208A are cited in a contract. It is quite possible that additional procedural elements over and above those listed might be applicable, depending upon the individual contract situation. Thus, it remains extremely important that the QAR carefully review all the contracts with a given contractor's operation to assure that all required written procedures are prepared.

b. The alpha designators are assigned primarily for use in the preparation of PE Check Lists. Where additional elements are considered applicable to a given contractor situation, additional alpha designators will be assigned by the QAR. In connection with Process Controls, for example, it may be desirable to have separate check lists for each of the special processes that are involved to facilitate procedures evaluation. In these cases designators will be assigned such as P-1 or P-2. Another application is in use of alpha designator Y Receiving Inspection, which is normally applied to Inspection Systems such as MIL-I-45208A. It may also be used to supplement element K for MIL-Q-9858A.

Alpha Designation	Guide to Requirement for Written Procedures
A	Advanced Metrology Requirements
B	Bailed Property
C	Completed Item Inspection and Test
D	Corrective Action
E	Cost Related to Quality
F	Drawings, Documentation, and Change
G	Government Furnished Material
H	Government Inspection at Subcontractor or Vendor Facilities
I	Handling, Storage, and Delivery
J	Indication of Inspection Status
K	Materials and Materials Control
L	Measuring and Test Equipment
M	Nonconforming Material
N	Organization
O	Planning
P	Process Control
Q	Production Tooling Used as Media of Inspection
R	Production Processing and Fabrication
S	Purchasing Data
T	Records
U	Responsibility for Control of Purchases
V	Statistical Quality Control and Analysis/Sampling Inspection
W	Use of Contractor's Inspection Equipment
X	Work Instructions/Inspection and Testing Documentation
Y	Receiving Inspection
Z	Specialized Safety

PART 3

PROCEDURES EVALUATION

4–300—PURPOSE. This part implements ASPR 14–403 and 14–404 by providing instructions to the QAR for the evaluation of the contractor's compliance to written quality procedures to assure compliance with individual contract requirements.

4–301—GENERAL REQUIREMENTS.

a. PE is the activity involved in verifying that the contractor is complying with his written quality procedures and that the procedures are accomplishing their intended purpose of controlling product quality. The basis for these evaluations are the check lists developed and verified by the QAR, which will reflect the contractor's compliance or noncompliance with his written quality procedures.

b. PE is required for newly developed and revised procedures commencing during the earliest phase of contract performance. PE will include product oriented methods of evaluation when contractor procedures relate to control of characteristics through control of production processes or further assembly, control of equipment or devices used in manufacturing, and other in-plant operations which function under controlled conditions, including inspection. (See paragraph 4–110). In these cases, physical evaluation of the product to the controlling criteria (dimensions, plating thickness, etc.) is necessary to determine adequacy of the applicable procedure. This evaluation will provide assurance that the controls applied by the contractor will result in an acceptable product.

c. PE should be accomplished in sufficient time so as not to unduly delay acceptance of end items. Evaluations shall be conducted throughout the life of the contract(s) involved. The QAR will assure that the established controls are maintained by the contractor, and any necessary adjustments are made when procedures fail to accomplish their intended purpose.

4–302—CHECKLISTS FOR PE

a. Check lists for PE shall be developed utilizing DD Form 1709. Each element of the contractor's written quality procedures must be carefully studied in order to identify those characteristics of the procedures which could have a direct effect upon the quality of the supplies or services covered by the contract(s). The characteristics to be included on the DD Form 1709 must in all cases be identifiable to the contractor's written quality procedures by page and paragraph number and in selected cases, to a specific contract requirement such as Safety Clauses or IPE. In some cases, the characteristic will be an exact duplication of the wording contained in the contractor's procedures; in other cases, the characteristic will be worded to reflect the requirement as contained in the contractor's written procedures. In the development of these characteristics, the QAR may determine that a characteristic representing a specific area of activity is important but is not traceable to the contractor's written quality procedures. Where this occurs, it is incumbent upon the QAR to obtain the necessary change to the contractor's written procedures.

b. Caution should be exercised in the preparation of check lists to prevent redundant QAR activity. For example, one procedural element that is required to be covered in the contractor's written quality procedures, when procedures are required by contract, is corrective action. When a MRB is authorized, the QAR must be concerned with corrective action taken to preclude recurrence on individual defects processed by the MRB. Where customer complaints are received, the QAR again must determine, on those complaints reflecting nonconformance with contract requirements that the contractor's corrective action to preclude recurrence is effective. On any defects reported to the contractor by the QAR requiring corrective action, the QAR is

responsible to followup on the indicated corrective action to determine that it is effective. Thus, the characteristics developed for corrective action for inclusion on the DD Form 1709 for PE purposes would be restricted to those actions required to be taken by the contractor in accordance with his written quality procedures that are not otherwise covered as a part of the normal QAR activity.

c. After the characteristic for a given element has been established, it is necessary that the QAR identify the areas of the contractor's facility where this characteristic is applicable. This can be accomplished by identifying the specific area of activity such as the gage laboratory.

d. The next determination that must be made by the QAR is the method of evaluation for each characteristic entered on DD Form 1709. This is a brief description of the technique to be employed and the amount of activity necessary, including the number of actions to be accomplished at each location, to evaluate contractor compliance with that characteristic. The importance of the characteristic relative to the control of product quality must be considered by the QAR in establishing the amount of activity required. For example, under the element Handling, Storage, and Delivery as required by MIL-Q-9858A, a characteristic may be developed to reflect the contractor's procedure relative to the storage of contractor furnished material awaiting incorporation into production. A second characteristic may be related to the preservation of material in preparation for shipment. With respect to the first characteristic, which is concerned primarily with the deterioration of material while in storage, it may be sufficient to check a small number of items of material which the procedures indicated must be controlled from the standpoint of environment and age. For the second characteristic, involving preservation of outgoing material, it may be desirable to evaluate a larger number of products to determine that the contractor's procedure relative to preservation is being complied with. The evaluation criteria must be stated in a manner that will detect the contractor's compliance or noncompliance to the written procedure which the characteristic represents.

e. Each checklist may consist of one or more pages and will be identified by alpha designator, number, product line, area or other means. Each characteristic within a given checklist will be numerically identified to facilitate the identification of the characteristic on the DD Form 1711.

f. PE check lists may be prepared by the listing of all applicable characteristics for a given element on a single check list; by combining applicable characteristics for different elements that are closely related on a single check list; or on an area basis wherein all the applicable elements within a geographical area of the contractor's facility are listed on the same check list. In addition, it may be desirable to list the characteristics for a given element such as "Records" on the check lists developed for other elements or combination of elements to which these Record characteristics would apply. In the latter case, a separate PE check list for the element "Records" would not be required unless there were some characteristics associated with this element that would not be verified in conjunction with the PE of the remaining elements.

g. In determining the approach to be utilized for the preparation of the PE check lists, the following factors should be considered:

(1) The extent of activity associated with a given element, i.e., the number of applicable characteristics and the extent of Government evaluation for those characteristics that are determined to be necessary, as well as the required frequency of the evaluation.

(2) The desirability of having the results of an individual PE identified to an individual element.

(3) Geographical dispersion of a contractor's activity relative to a given element or group of related elements.

h. Where the contractor's written quality procedures encompass a considerable amount of activity relative to these individual elements, PE by individual elements is generally more desirable.

i. Where the activity associated with individual elements is not extensive or the activity associated with these elements is generally confined to limited areas, PE on the basis of combining applicable characteristics of related elements might be the more logical approach. For example, the elements Measuring and Test Equipment, and Production

Tooling Used as a Media for Inspection are closely related and could be combined. Another example of a combination of elements may be Government Furnished Material and Bailed Property.

j. Within a contractor's facility wherein the applicable characteristics for individual elements and the extent of Government evaluation are limited, it may be desirable to combine all applicable characteristics of all elements on a given check list on a geographical basis which may be facility wide.

k. For certain activities where the contractor's operation is remotely isolated, it may be desirable to identify the applicable characteristics for all the elements associated with that particular activity on one check list. An example of this approach could be where a contractor has a centralized receiving operation isolated from the main manufacturing facility, or where a centralized receiving activity services several different manufacturing facilities. In this example it may be desirable to combine the elements, Records; CA; Drawings, Documentation and Changes; Measuring and Test Equipment; Nonconforming Material; Statistical Quality Control and Analysis; and Indication of Inspection Status into one check list. If this approach is taken, it may still be necessary to have separate check lists covering these elements for the remainder of the facility.

4-303—PERFORMANCE OF PE

a. The QAR shall evaluate the contractor's compliance to each new or revised written quality procedure, for which characteristics have been developed, at the time of its initial implementation. The primary purpose of the initial evaluation is to determine the adequacy of the procedure as well as the conformance on the part of the contractor to the procedure. During this initial evaluation all characteristics at all applicable locations for a given check list will be verified. For subsequent evaluations all applicable characteristics for a given check list will be verified; however, where an individual characteristic is applicable at more than five locations Table 1, below, may be used for randomly selecting the number of locations for evaluating the characteristic.

b. Often PQA activity is limited to that which can or must be performed at time of individual shipments, such as preservation, packing, packaging and marking. In these situations, however, written procedures are sometimes a requirement and therefore PE is required. In such cases the PE can be conducted along with the PVI activity performed to determine the acceptability of the supplies or services. Results of the PE may be entered on the same DD Form 1711 used to record the results of PVI or recorded on a sepatate DD Form 1711.

4-304—FREQUENCY OF PE

a. In establishing frequencies, the QAR must consider the relative importance of the procedural element(s) and the characteristics in the control of the supplies or services required by contract. For example, the element relating to Organization as required by MIL-Q-9858A would not require a PE at the same frequency as the element of Materials and Materials Control. The established frequency may be indicated on DD Form 1709, planning documentation or other appropriate methods.

b. For a given PE check list, the same frequency may be applicable to all characteristics when it is determined that they all have essentially the same relative importance. Where it is determined that some characteristics relating to a given subject have

No. of Locations Where Characteristics are Applicable	Minimum Locations to Evaluate Characteristics
5	All
6-19	5
20-34	7
35 or more	9

Table 1

more relative importance than others, separate check lists may be developed and different frequencies assigned or different frequencies may be reflected on a check list. When it is determined that the contractor is conforming to the approved written procedures in a satisfactory manner, the QAR may adjust the frequency for individual elements for time intervals up to 180 days. Frequencies for characteristics at each location to evaluate process controls should not exceed 60 days. DD Form 2020, is provided for optional use by the QAR for scheduling PE. Flexibility in adapting this form for local use is authorized.

c. To determine the adequacy of the procedure and the contractor's compliance thereto, it is essential during the initial evaluation and frequently during continuing evaluation to verify that products are being controlled by the procedure. For example, in the special processes area of plating where the thickness is a function of time, temperature, amperage, and solution, the thickness of the plating can be determined by the use of eddy currents. Another example would be in the heat treating area. In this case the controls are time and temperature. To verify that time and temperature are providing the desired results the product hardness can be verified by hardness testing. Where products are examined for the purpose of assuring that the procedure is being properly followed, the evaluation criteria will so state.

d. Where PVI and PE can only be accomplished in conjunction with shipment, PE frequencies may be established by statements such as "in conjunction with product examination"; "each visit" or "every third visit".

e. PE may be performed by the QAR alone or as a joint team effort involving various skilled technical specialists. This effort can be very beneficial especially during the initial evaluation phase. QARs should make maximum use of technical specialists and PO technical personnel to obtain additional assurance as to the adequacy of the contractor's procedures and to provide any required "on-the-job" training to QA personnel that will subsequently be performing PE.

f. The determination by the QAR of an inadequate procedure or nonconformance to a procedural characteristic does not necessarily mean that the established frequency for evaluating the check list should be changed. The normal course of action upon observing defective procedural characteristics is to initiate the required corrective action. Where the observed defective procedural characteristics could or does result in the processing of defective product, the contractor should be immediately advised and requested to effect corrective action relative to the product that has been processed, or is currently being processed.

g. The results of PE shall be recorded on DD Form 1711. The number of observations are determined by multiplying the total number of locations for each characteristic verified by the number of actions verified at each location.

4–305—INSTRUCTIONS FOR COMPLETING DD FORM 1709. The form will normally be completed as follows. Flexibility in adapting the form to local conditions is authorized.

a. *Contractor.* Enter the name of the contractor.

b. *Date Prepared.* Enter the date the form was prepared.

c. *Alpha Designation.* Enter the alpha designation or designations, or other identification. (See paragraph 4–302e).

d. *Evaluation Location.* Identify the location within contractor's facility where the specific characteristic can be evaluated.

e. *Contractor Procedure No., Page No., Paragraph No., and Date.* Identify, as applicable, the contractor's written procedure, including number, page, and/or paragraph from which the characteristic was selected and the date of the procedure.

f. *Review Procedures Characteristic Number.* Briefly describe the characteristic to be evaluated. The characteristics will be identified numerically in the space provided.

g. *Method of Evaluation.* Briefly describe the method to be used for evaluating the contractor's compliance to the characteristic. Indicate the number of actions to be verified at each location.

4–306—INSTRUCTIONS FOR COMPLETING DD FORM 1711, OBSERVATION RECORD.

The form will normally be completed as follows:

Flexibility is permitted in adapting the form to local conditions.

a. *Front Side.*

(1) *Block 1. Contractor.* Enter the name of the contractor.

(2) *Block 2. Contract/Procedures Review Check list.* Enter the check list identification shown on DD Form 1709.

(3) *Block 3. Activity.* Enter PE.

(4) *Block 4. Operation/Location.* No entry required.

(5) *Column A. Serial Number.* No entry required.

(6) *Column B. Individual.* Enter the initials of the individual conducting PE.

(7) *Column C. Date.* Enter the month, day, and year the action is accomplished. (Show year at top of column).

(8) *Column D. Time.* Optional.

(9) *Column E. Number of Observations.* Enter the total number of observations made.

(10) *Column F. Number of Defective Observations Made.* Enter the total number of defective observations made.

(11) *Column G. Percentage of Defective Observations.* (For local optional use) Enter the percent of defective observations (divide number entered in Column F by number entered in Column E and multiply quotient by 100).

(12) *Column H. Total Defectives.* No entry required.

(13) *Column I, J, K and L.* No entries required.

(14) *Column M. Identification.* Enter the number in the vertical column which corresponds with the characteristic number listed on the DD Form 1709 check list that is to be evaluated. Below each characteristic enter the number of observations above the diagonal line and the number of defective observations below the diagonal.

(15) *Column N. Procedures.* No entry required.

(16) *Column O. Other Defects.* Enter the number of defects observed which are not related to procedures evaluation being performed.

(17) *Column P. Number of Items Examined.* No entry required.

(18) *Block 5. Total This Report.* No entry required.

(19) *Block 6. Process Average.* Entry optional.

b. *Reverse side*

(1) *Date.* Enter the month, day and year that corrective action was initiated.

(2) *Type of Corrective Action Taken.* Place an "X" in the appropriate subcolumn to indicate the method of corrective action initiated.

(3) *Defect Observed.* Enter a brief description of the defect observed and also reference the corrective action document if Method B, C, D or E is used by indicating reference number and/or date.

(4) The last column may be used for any data required.

PART 4

PRODUCT VERIFICATION INSPECTION

4–400—PURPOSE. This part implements ASPR 14–403(a), (b), and (c), in part, by providing techniques to be used by the Government to verify that items produced and offered by a contractor to the Government for acceptance, do in fact comply with contractual quality requirements before such items are accepted by the Government. It implements ASPR 14–404(i) and (ii), in part, relative to maintenance of Government verification records.

4–401—GENERAL

a. The concepts of paragraphs 4–402 and 4–403 are predicated on the following premises:

(1) That the contractor is responsible for controlling product quality and for offering to the Government for acceptance only those supplies and services that conform to contractual requirements and, when required, for maintaining and furnishing objective evidence of this conformance.

(2) That the Government is responsible for determining that contractual requirements have been complied with prior to acceptance of the supplies or services.

(3) That sound management of QA resources requires that manpower effort be applied where the interests of the Government can best be served. These best interests can be served only by identifying and concentrating on those areas where the contractor is experiencing or exhibiting difficulty in controlling product characteristics.

b. Paragraph 4–402 requires the Government to verify, during the earliest phase of production, the contractor's ability to control product quality. This is accomplished by the performance of IPI. Contract end items will not be accepted until this IPI has been accomplished. In carrying out the actions specified, the QAR is further required to document the results of Government verification and to notify the contractor that products will not be accepted until noted nonconformances and their causes have been corrected, or corrective action has been initiated in accordance with an acceptable time phased plan. The basic assumption is made that if a contractor can meet the item characteristic requirements during initial production, a high degree of probability exists that they will continue to be met. Hence, Government verification can be reduced. Conversely, if the contractor offers the product to the Government for acceptance that does not meet requirements, the Government will require the contractor to initiate corrective action and the Government will intensify the verification level until such time as substantiating evidence of conformance is offered.

c. Paragraph 4–403 describes how the QAR will maintain assurance of contractor ability to control product quality subsequent to performance of IPI on those characteristics controlled by the contractor by direct inspection and test. Paragraph 4–403b contains a verification plan for performing Intensified PVI of item characteristics that are determined by the QAR to be in nonconformance with requirements as a result of applying initial product inspection. Paragraph 4–403c contains verification plans for performing RPV inspection of item characteristics determined by the QAR to be in conformance with requirements as a result of applying initial product inspection. Provision is also made for intensifying verification of item characteristics determined to be nonconforming to requirements during application of RPV inspection or at the time a complaint is received from a user or recipient of the item.

d. When a commodity manual is applicable to PQA on a procurement, the procedures specified in the commodity manual shall be used in lieu of those specified herein.

e. Each CAO component assigned responsibility for administration of contracts usually has an internal organizational element responsible for pro-

viding support and assistance to the QAR. These elements normally consist of personnel who possess special skills. Since the QAR is not expected to possess all of the skill or knowledge that may be required to perform all the verification actions required, maximum utilization should be made of the skills and knowledges available at or through the CAO or purchasing office.

f. The procedures in this section set forth the minimum requirements for PVI. The QAR will comply with inspection instructions imposed by procuring activities. These instructions may be substituted for the procedures specified in paragraph 4-403 when such instructions tend to duplicate the effort required by paragraph 4-403. ASPR 14-203 requires review of Government inspection instructions, and when appropriate, recommendations to be made to the purchasing office for their improvement in terms of both technical effectiveness and cost, particularly with respect to personnel, equipment and facilities.

4–402—INITIAL PRODUCT INSPECTION (IPI)

a. Performance of IPI.

(1) The QAR in conjunction with the contractor will review the physical location(s) in the plant where the characteristics are to be controlled by contractor inspection or testing. These are the characteristics identified in paragraph 4-110c (1). In some instances this may have been accomplished previously as an integral part of the actions necessary to determine the contractor methods for controlling the characteristic. These locations will be called CIPs.

(2) The QAR will determine the physical location where the government verification will be performed. Normally, the government verification will be performed at the same location where the contractor controls the characteristic. This is where the measuring or test equipment and contractor records are normally available. In addition, this is the place where tighter contractor control/corrective action must be applied if discrepancies are found.

(3) Based on the determinations made above, a separate DD Form 1711 will be prepared for each level of assembly at each CIP where Government PVI is performed. Alternatively, one or more DD Forms 1711 may be prepared for each CIP, listing item part numbers and/or characteristic source documents in Column "M" in lieu of characteristics, provided the characteristic source document is kept available for the full retention period of the DD Form 1711 and identifies characteristics inspected or tested. Separate 1711s may be prepared for functional and visual/mechanical inspections where deemed more practical by the QAR. The DD Form 1711 will reflect results of the verification and, where nonconformances are detected, action taken to correct the cause of the nonconformance.

(4) The QAR shall arrange for Government verification by inspection or test of those characteristics identified above during the earliest possible phase of production. The inspection and test performed by the Government at this time is called the IPI and serves as the initial evaluation of the contractors conformance or nonconformance to technical requirements. Normally, Government verification will be performed subsequent to and independent of the contractor's inspection. However, when the nature of inspection or test will be detrimental to the item being inspected, an extended period of time is required to conduct the test, or other factors exist which may unnecessarily contribute to high testing costs, the Government may, concurrently with the contractor, witness the inspection being performed by the contractor. The DD Form 1711 used to record inspection results will be annotated by placing a "C" after the characteristic source document description. Only personnel capable of independently performing the inspection will perform them concurrently as follows:

(a) As the contractor performs the inspection, closely witness each examination or test.

(b) Independent of the contractor, read the measuring or test equipment to determine whether the item meets requirements.

(c) Observe whether the contractor accurately records the inspection results. A defect properly recorded by the contractor will not be recorded by the QAR as a defect. This is because the contractor had identified the defect and a decision by the QAR regarding its acceptability was not necessary. However, the QAR may maintain records that the defect occurred if such records will be helpful for other

purposes, such as quality data evaluation.

b. *Prerequisite for Performing IPI.* As a prerequisite for performing IPI, the following actions will be taken and recorded on DD Form 1711 in the procedures block. These preinspection actions will be recorded as three observations:

(1) Review the contractor's work/inspection instructions pertaining to the level of assembly to determine availability and adequacy of the instructions.

(2) Evaluate the inspection equipment used by the contractor to control the applicable characteristic (s). This action is to verify currency of calibration and that the capability and stated accuracy of the inspection equipment is adequate to determine the conformance/nonconformance of the characteristic being inspected.

(3) Evaluate the documentation used to record the results of contractor's inspection. This review will determine the adequacy of contractor records.

c. *Support Parts/Subassemblies*

(1) Special attention should be given to those instances where support parts/subassemblies are being procured to assure that the contractor control is adequate when these parts/assemblies will not be subjected to further assembly or test. These situations may require different contractor control (and QAR verification) of various characteristics to assure product quality similar to that obtained when parts/assemblies are incorporated into higher level assemblies.

(2) An IPI may be required to be performed on support parts/subassemblies; however, performance by verification through further assembly and/or test adequately satisfies this requirement if it has already been accomplished as a part of a higher configuration level item.

d. *Corrective Action*

(1) Corrective action shall be taken as required by part 5 of this section.

(2) Significant nonconformances noted by QARs at subcontractor facilities will be communicated to prime QARs, and confirmed in writing.

e. *Situations Requiring/Not Requiring Additional IPI*

(1) *Identical Items.* Where contracts are received for identical items which have been verified and have been in production within the past 180 days, and the QAR has determined that no substantial changes have been made in the processes, personnel or equipment, an IPI is not required.

(2) *Similar Items.* Where contracts are received for similar items, or changes to items on existing contracts are received, the QAR shall perform an IPI on those areas of the items that are dissimilar to or changed from the original items.

(3) *Changes in Personnel, Processes or Equipment.* Where the contractor makes substantial changes in the process, personnel or equipment, an IPI will be performed on all characteristics affected by the changes.

f. *Verification of Items Completed Prior to Contract Award.* In some instances, the Government purchases items that have been acquired, or manufactured by the contractor prior to receipt of the contract. Where the QAR receives a contract for such an item, Government actions shall be as prescribed in paragraph 4-404 below.

4–403—CONTINUING VERIFICATION

a. *General*

(1) Characteristics determined to be in nonconformance with requirements as a result of IPI shall be subjected to IPV inspection in accordance with subparagraph 4-403b below.

(2) Characteristics determined to be in conformance with requirements as a result of IPI shall be subjected to RPV inspection in accordance with subparagraph 4-403c below.

(3) Concurrent inspection described in paragraph 4-402a(4) is permitted when conducting continuing verification.

(4) Exceptions to subparagraphs (1) and (2) above are:

(a) Where the contractor is required to control product quality under an existing quality program or inspection system and IPV/RPV procedures are not applicable: PQA actions are required to inspect, accept and ship individual quantities of product; production is not sufficiently continuous for application of IPV/RPV procedures; PCO imposed inspection plans are provided. The QAR shall use the most appropriate and economical sampling plan (e.g. DSAM 8200.2, MIL-STD-105, PCO imposed

plan) in lieu of IPV/RPV procedures. An IPI will be performed in accordance with paragraph 4–402 on the first unit selected in the initial sample.

(b) Where the contractor is not required to control product quality under a quality program or inspection system. The QAR shall use the most appropriate and economical sampling plan to verify product quality characteristics. An IPI is not required, however those characteristics which will assure that the items meet contract requirements must be verified.

(c) Where the contract specifies the quality level by AQL and conditions arise where a contractor's inspection system is suspected to be unreliable. The sampling plan required of the contractor will be used by the QAR, until contractor inspection reliability is reestablished.

b. *IPV Inspection.* Application of intensified Government effort to control nonconforming product characteristics assures optimum use of Government manpower. It provides a basis for systematic analysis of data to identify design, production, and quality control problems. Additionally, it provides a baseline for initiating actions, as may become necessary, to ensure protection of the Government's interest by maintenance of specific evidence relating to inability to control product quality.

(1) *Preparation of IPV Lists*

(a) Where it has been determined that a product characteristic does not conform to a drawing/specification requirement, either through inspection performed during IPI/RPV or through investigation resulting from receipt of a materiel deficiency report, the QAR shall initiate action to verify the nonconforming characteristic at an intensified Government verification level.

(b) Using information developed during application of IPI the QAR shall prepare one or more DD Forms 1711 as required for each CIP where nonconforming product characteristics have been detected. DD Forms 1711 developed for IPI may be used provided nonconforming characteristics are identified to IPV.

(c) Using information developed during application of RPV, the QAR shall adjust/prepare the appropriate DD Form 1711 so as to provide for intensified verification of product characteristics where the contractor exhibits an inability to maintain continuous control for specific requirements. See subparagraph c for criteria for placing a characteristic verified at RPV level on IPV.

(d) Using information resulting from investigation of materiel deficiencies the QAR shall adjust/prepare the appropriate DD Form 1711 to provide for intensified Government verification of product characteristics determined to be defective during investigation of the deficiency.

(e) The QAR should use any evidence such as records showing questionable trends, suspect set ups, or improper manufacturing processes, as a basis for placing characteristics on IPV until confidence is restored.

TABLE IV-100

INTENSIFIED PRODUCT VERIFICATION LEVELS

Average No. Assemblies/Parts	
Ready for Inspection Per Shift	To be Verified by Government Per Shift Pending Corrective Action Initiated by Contractor
1-9	ALL
10-30	10
31-90	20
91-270	30
271-810	40
811-2430	50
2431-7290	60
7291-21870	70

TABLE IV-200

REDUCED PRODUCT VERIFICATION (RPV) HIGH VOLUME CONTINUOUS PRODUCTION/INSPECTION

Average No. Assemblies/Parts Ready for Inspection Per Shift	To be Verified by Government Per Shift		
	Step 1	Step 2	Step 3
10-30	5	3	2
31-90	10	5	3
91-270	15	8	4
271-810	20	10	5
811-2430	25	13	7
2431-7290	30	15	8
7291-21870	35	18	9
21871-65610	40	20	10
65611-196830	45	23	11

TABLE IV-300

REDUCED PRODUCT VERIFICATION (RPV), LOW VOLUME CONTINUOUS PRODUCTION/INSPECTION

Step No.	Frequency of Sampling
1	1/2
2	1/4
3	1/8

TABLE IV-400

REDUCED PRODUCT VERIFICATION (RPV) CHARACTERISTIC SELECTION

No. of Characteristics Identified on DD Form 1711/ Characteristic Source Document	No. of Characteristic to be Verified
1-3	ALL
4-8	3
9-15	5
16-25	8
26-50	13
51-90	20
91-150	32
151-280	50
281-500	80

(2) *Level of Verification.* IPV shall be performed on those product characteristics identified above, at the level shown in table IV-100.

(3) *Placing Characteristics on RPV.* The QAR may place a characteristic on RPV at the current step in effect as soon as the contractor's corrective action as to cause has been adjudged effective based on verification of the characteristics on assemblies,

parts or items produced subsequent to the corrective action, or corrective action has been initiated by the contractor in accordance with an acceptable time phased plan.

(4) *Recording and Maintenance of Verification Results.* Results of IPV will be recorded on the applicable DD Form 1711 immediately following the verification action.

(5) *Corrective Action.* CA will be taken in accordance with part 5 of this section.

c. *RPV Inspection.* RPV provides a continuing and systematic method for verifying contractors control of product. However, verification activity is managed by levels of assembly rather than by characteristic as in IPV.

(1) *Preparation of RPV Lists.* The QAR shall prepare one or more DD Forms 1711, as required for each CIP. The QAR may use DD Forms 1711 developed during IPI and/or IPV, where practical.

(2) *Level of Verification.* Assemblies/parts on RPV shall be selected from homogeneous groups as follows:

(a) When a CIP has an average of 10 or more assemblies/parts ready for inspection during a shift, they shall be selected for verification in accordance with table IV-200.

(b) When a CIP has an average of 1 to 9 assemblies/parts ready for inspection during a shift, they shall be selected for verification in accordance with table IV-300. A decision to inspect or not to inspect will be made each time an item becomes available. A decision not to inspect must be documented to the contractor to allow him to proceed. This table may be used even though items are not presented during each shift, provided that continuous production and/or inspection are maintained by the contractor.

(c) When table IV-300 is not applicable due to extensive inspection or testing of items such as major systems and complex items which require more than one shift to complete, continuing verification will be conducted on each item. As a minimum, table IV-400 will be used to sample PVI characteristics which become available during a shift. The QAR shall develop a plan which assures verification of the required number of characteristics throughout the span of the test. This may be accomplished by dividing the total number of PVI characteristics by the number of shifts; by dividing the inspection or test into major segments which would be identified as characteristics; or any other plan which provides for verifications during the shifts when PVI characteristics become available.

(3) *Switching Steps.* When using table IV-200, the QAR may switch from step #1 to step #2 or from step #2 to step #3 after the required number of characteristics in the RPV list have been verified during three successive shifts at the step in effect and found free of defects. When using table IV-300, the QAR may switch from step #1 to step #2 or from step #2 to step #3 after the required number of characteristics in the RPV list have been verified three successive times at the step in effect and found free of defects.

(4) Selection of characteristics for RPV assembly/part characteristics will be randomly selected for verification from the applicable 1711/characteristic source document using table IV-400. Characteristics on IPV may be excluded. When using table IV-400 do not use visual type characteristics which are inherently verified by performing an inspection.

(5) *Additional Rules for RPV Inspection*

(a) When performing RPV, any characteristic which has not been verified within the past 30 days will be automatically selected for verification, except when table IV-400 is used for PVI on major systems and complex items which require more than one shift for contractor inspection or test. The QAR should develop an appropriate recording method when utilizing characteristic source documents in lieu of DD Form 1711.

(b) If during steps 1, 2, and 3 of table IV-200 or IV-300 a characteristic of an assembly/part is found defective, this characteristic will be inspected on the next three such assemblies/parts produced by the contractor to determine if the defective characteristic exists in current production. If this characteristic is defective on any one of these three assemblies/parts, the characteristic will be placed on IPV and RPV will proceed on the remaining characteristics. If the characteristic is not defective on any of these three assemblies/parts, the charac-

teristic will remain on RPV and the step may be switched in accordance with subparagraph (3) above.

(6) *Recording and Maintenance of Verification Results.* Results of continuing verification shall be recorded on the applicable DD Form 1711 immediately following the verification action.

(7) *Corrective Action.* CA shall be taken in accordance with part 5 of this section.

4–404—INSPECTION AND ACCEPTANCE OF SUPPLIES MANUFACTURED AT MULTIPLE LOCATIONS

a. Contractors frequently perform, or have performed by subcontractors, some amount of manufacturing and inspection at locations other than the Government inspection/acceptance point shown in the contract. In some instances the end item is shipped direct to the Government and the manufacturing location is shown in the contract. Under these conditions, the CAO QA element cognizant of the manufacturing location automatically performs the PQA function under the special procedures of paragraph 5-102.

b. Other contracts, when shipment is not made direct to the Government, may or may not list suppliers (subcontractors) from whom the contractor is required to obtain supplies, components or have special processes performed. Most contracts do not list such suppliers or processors. Regardless of their being listed, the QA element of the CAO cognizant of the inspection point shown in the contract is required to assure total product conformance. This assurance will be made by one or more of the following:

(1) Reviewing objective quality evidence, as required by section V, part 2.

(2) Verify the statements of quality in accordance with the procedures of paragraph 5-204.

c. The nature of some commodities is such that inspections and processes performed at other locations cannot be verified at the Government inspection/acceptance point shown in the contract. For example, the grading of lumber can only be properly determined prior to treatment, and treatment may be performed at a point other than the Government inspection/acceptance point. For such contracts, Government PQA must be requested at the point of treatment (subcontract level) where the QAR will verify grading prior to treatment. Maximum utilization will be made of selective evaluation when requesting such PQA actions in accordance with section V, part 1. The requests should be made only to the extent necessary to verify the accuracy of the objective quality evidence available at the contractual point of Government inspection/acceptance.

4–405 PROCUREMENT QA ACTIONS FOR OFF-THE-SHELF ITEMS (ITEMS ALREADY PRODUCED)

a. When the contract requires an inspection system (MIL-I-45208A) or a quality program (MIL-Q-9858A) and off-the-shelf items are presented by the contractor, the CAO cannot normally verify that the supplies offered for acceptance have been produced under the in-process quality requirements of the contract. ASPR 14-101.5(b) prohibits incorporation of these specifications in contracts for off-the-shelf items. The ACO and the PCO will be promptly advised of this fact and of the limited PQA actions which can be accomplished on the already completed items. DD 1716 will subsequently be issued. The QAR will not accept the supplies unless the contract is modified to delete the MIL-I-45208 or MIL-Q-9858A requirement and the delegation is revised (if necessary) to include only those PQA actions which can be performed.

b. When the contract includes only the standard inspection clause, (e.g. ASPR 7-103.5) compliance with this quality requirement can normally be determined by inspection of the completed item and review of the contractors inspection records. When the contractor offers items under these circumstances the QAR should proceed in accordance with paragraph 4-403a(4). However, if inspection of the items is not possible because the contractor is a dealer, or inspection criteria are not otherwise available the PCO should be advised as in subparagraph (a) above, and acceptance withheld until the contract and, if necessary, the delegation is revised.

c. Small Purchase ((DD 1155 Procurements) which include only the Responsibility for Inspection Clause should not normally be a problem when off-

the-shelf items are offered. ASPR 14-308 limits PQA actions on these procurements to examination of:

(i) Type and kind.
(ii) Quantity.
(iii) Condition.
(iv) Operability, if readily determinable.
(v) Preservation, packaging, and marking, if applicable.

4–406—PREPARATION OF DD FORM 1711. The same DD Form used to record results of IPI may be used to record continuing verification results. DD Form 1711 will normally be prepared as follows. Maximum flexibility is permitted in adapting the form to local conditions.

a. *Front Side*

(1) *Block 1. Contractor.* Enter the name of the contractor.

(2) *Block 2. Contract.* Enter the contract number. If more than one contract is involved, enter "various".

(3) *Block 3. Activity.* Enter "Product Verification Inspection" or "PVI".

(4) *Block 4. Location.* Enter the number and/or other designation used to identify the CIP.

(5) *Block 5. Total this report.* Enter totals for columns E and F (optional).

(6) *Block 6. Process Average.* Optional.

(7) *Column A. Serial No.* Enter the serial number if applicable.

(8) *Column B. Individual.* Enter the initials of the individual conducting the verification.

(9) *Column C. Date.* Enter the month, day and year that verification was accomplished. (Show year at top of column)

(10) *Column D. Time.* Optional.

(11) *Column E. Number of Observations (Characteristics).* Enter the total number of characteristics verified. Obtain by adding numbers above diagonals.

(12) *Column F. Number of Defective Observations (Characteristics).* Enter the total number of nonconforming characteristics detected. Obtain by adding numbers below the diagonals.

(13) *Column G. Percentage of Defective Observations.* (For local optional use.) Example: Enter percent of defective observations (divide number entered in column F by number entered in column E and multiply by 100).

(14) *Column H. Total Defectives.* No entry required.

(15) *Columns I, J, K, L.* Use as required.

(16) *Column M. Identification.* Enter the assembly/component/area identification and the characteristic/characteristic source document identification at the top of the page. Enter the quantity of characteristics verified above the diagonal and the quantity of characteristics found to be nonconforming below the diagonal.

(17) *Column N. Procedures.* Record number of prerequisite actions (observations) performed during IPI.

(18) *Column O. Other Defects.* Enter the number of defects observed which are not related to PVI being performed.

(19) *Column P. Number of Items Examined.* Enter the total number of items on which characteristics were verified.

b. *Reverse Side, Upper Portion.*

(1) *Date.* Enter date nonconformance was detected.

(2) *Type of Corrective Action Requested.* Indicate the level of action taken.

(3) *Defect Observed.* Enter the description of the nonconformances detected during verification.

c. *Reverse Side, Lower Portion.* This portion will be used to record contractor inspection comparability results required for proper application of special sampling plans such as DSAM 8200.2 skip lot and ratio skip lot.

PART 5

CORRECTIVE ACTION

4-500-PURPOSE. This part implements in part FAR 46.407 by defining the methods that are to be used in requesting the contractor to take corrective action, maintenance of Government records, and explaining those circumstances under which these methods should be applied.

4-501-GENERAL. Any breakdown or inadequacy in the contractor's inspection system or quality program requires action by the QAR to assure that product quality is not compromised. The extent of this action is dependent on the frequency and importance of the defect or deficiencies. The contractor will be required to correct the defects and eliminate the cause. The QAR must determine the effectiveness of this action. The QAR will also determine the necessity for tighter control until assured that the contractor's corrective action is satisfactory.

4-502-METHODS OF CORRECTIVE ACTION. When corrective action on the part of the contractor is required, it will be requested by one or more of the following methods.

a. Method A. On-the-spot CA will be taken with the responsible contractor's personnel to correct the observed defect and its cause. This method should be used only when the defect is minor in nature and the QAR considers followup action unnecessary. The deficiency will normally be recorded on back of the DD Form 1711 and become a part of Government records.

b. Method B. When an observed defect is other than minor in nature, or when on-the-spot corrective action as to cause cannot be taken, DD Form 1715 will be initiated. Instructions for completing the form are contained in paragraph 4-508.

(1) Examples of when Method B corrective action is appropriate are:

(a) Initially requiring CA for contractor noncompliance with the written procedure.

(b) Rejection of product by the Government which indicates inadequate contractor inspection controls.

(c) Initially informing the contractor of inadequate written procedures.

(d) The QAR discontinues selective Government PVI. For example, when a piece of inspection equipment is found to be defective and erroneously accepts defective items, the QAR will not perform inspection with that equipment until its defective condition is corrected.

(e) Critical or major defects are noted.

(2) When the observed defect or deficiencies could have an effect on contract delivery schedules and the contract is assigned to the CAO for production surveillance, a copy of DD Form 1715 will be furnished to the production element.

(3) A copy of the DD Form 1715 will be furnished to the ACO with comments when progress payments are part of the contract.

c. Method C. When serious quality problems exist, a letter will be forwarded to the contractor's top management requesting immediate action of the observed deficiencies and their cause.

(1) Examples of when method C CA is appropriate are:

(a) An excessive number of DD Forms 1715 have been issued.

(b) DD Forms 1715 have been issued for repetitive deficiencies.

(c) The contractor has been negligent in preparing required written quality procedures.

(d) The contractor has failed to correct inaccurate quality procedures in a timely manner.

(e) There is evidence of a general deterioration in the contractor's inspection system or quality program.

(f) Discontinuance of Government PQA actions in limited areas because of serious discrepant conditions.

(2) A method C letter may be signed at the QAR level. However, to emphasize the importance placed upon the contractor correcting more serious deficiencies, the letter may be signed by levels above the QAR.

(3) A copy of each method C CA will be furnished to the QA and production elements in the QA and production elements in the CAO, the ACO, and the PCO.

d. Method D.

(1) Where the contractor cannot or will not comply with contract requirements and CA cannot be effected directly with the contractor by other methods, the QAR shall request the ACO to inform the contractor that all PQA actions will be discontinued. The ACO actions are taken as required by DLAM 8105.1. This request initiates method D CA. No further CA is taken with the contractor by the QA element of the CAO except as provided under other CA methods. It is the responsibility of the ACO to determine the appropriate course of action for the circumstances, and to advise the QA element. Government PQA actions shall be totally discontinued only when authorized by a letter signed by the ACO.

(2) Actions to be taken by the QAR in applying method D CA should include:

(a) Coordinating all efforts with his supervisor.

(b) Preparing a letter to the ACO advising him of the severity of quality deficiencies and providing therein.

(1) All necessary contract information including company name, address, contract number(s).

(2) A complete comprehensive description and history of the quality problem(s), and the need to discontinue PQA actions.

(3) Copies of all pertinent records and past attempts of corrective action as evidence of the contractor's failure to comply with contract requirements.

(4) Recommendations to resolve the problem where possible.

(c) Providing a copy of each method D corrective action request to the chiefs of the QA and production elements of the CAO and the PCO. Also, a copy of all requests shall be provided to the applicable Service or DLA Headquarters Quality Assurance element as appropriate.

(d) Providing additional information required by the ACO to initiate contractual actions.

(e) Providing support to the ACO as requested.

(f) Following up on Government requirement or negotiated actions, as requested by the ACO.

(g) Providing reports of progress made by the contractor in correcting quality deficiencies.

(h) Recording all actions taken as a result of initiating method D CA.

e. Method E. Where a subcontract is involved and the requirement for CA is of the magnitude of method C or D, the QAR cognizant of the prime contractor's facility will be informed of the circumstances and requested to have the prime contractor take immediate CA with the subcontractor.

4-503 METHOD TO BE APPLIED FOR REQUESTING CORRECTIVE ACTION (CA)

a. The QAR shall request the contractor take CA when any deficiency is found. The method of CA will depend upon the importance or criticality of the defect found. There is no restriction on the initial method of CA applied. For example, it may be appropriate to initially apply method C for critical defects found in life support items. Normally, however, the QAR will progress from method B through D, when necessary. Requests for CA methods B and C should be discussed with the contractor prior to reducing to writing.

b. The defective condition will always be objectively analyzed when selecting the method of CA. This analysis should consider the relative importance of the deficiencies in relation to the total requirements of the contracts. Prior responsiveness of the contractor to CA requests is also an important consideration.

4-504 ESCALATING CORRECTIVE ACTION FOR NON-RESPONSIVENESS. CA requests must be issued promptly and require a reply from the contractor within the shortest reasonable time frame. Failure of the contractor to reply within the designated time frame, or when the contractor's reply indicates reasonable efforts are not being taken to correct the cited discrepancy, shall result in the QAR escalating the CA request to the next contractor organizational level. To assure that conditions of unacceptable contractor responsiveness are not tolerated, it is also important to promptly escalate CA to the appropriate Government organizational level.

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4–505—DISCONTINUING GOVERNMENT PQA ACTIONS. Any discontinuance of PQA actions, because of deficiencies in the contractor's inspection system or quality program, will be appropriately documented. For selective discontinuance of such actions, the documentation may be a part of method B corrective action. A decision for selective discontinuance of such actions may also be coordinated at a level above the QAR and be a part of method C CA. When the QAR and QA supervision are of the opinion that the contractor either cannot, or does not intend to perform within the requirements of the contract, method D CA will be initiated. Under any conditions, withholding acceptance or discontinuing Government PQA actions must be reasonable and based upon sound and thorough documentation of the discrepant conditions.

4–506—QAR FOLLOWUP ON CORRECTIVE ACTION REQUESTS AND INTERIM CONTROL OF PRODUCT QUALITY.

a. The QAR shall verify the adequacy of the contractor's indicated CA for methods B, C, D, and E. These verification actions will be performed promptly. The results of this verification will be recorded on DD Form 1715, or by memo attached, or identified to the method C, D, or E correspondence. Where the ACO has directed that Government PQA actions be discontinued and the contractor has replied thereto indicating a certain course of CA, the QAR will verify the adequacy of this action and forward his findings and recommendations thru the QA component of the CAO to the ACO and PCO. A copy of his findings will be filed with the request for method D CA. DD Form 2019, is provided for optional use by the QAR for recording suspense dates and to provide CA history. Flexibility in adapting this form for local conditions is permitted.

b. Where logistical requirements dictate the PCO may request, in writing, that the Government continue end item inspection and acceptance of a product during a period of negotiation with the contractor regarding quality system deficiencies. All characteristics directly affected by the cited deficiencies must be verified on each unit selected for in-process or end item inspection.

4–507—NOTIFICATION OF POTENTIAL DEFECTIVE MATERIAL. All quality pesonnel must be continually alert to prevent the introduction of product into the Government's supply system which contains or is suspected of containing defective material(s), the nature of which would or could possibly create dangerous conditions, injure personnel, damage Government property, or affect mission completion. When something of this nature is discovered, either by the contractor of the QAR, under conditions which indicate the possibility that a product already delivered could contain the same properties, it must be reported to the PCO. Direct communication with the PCO is authorized with concurrent notification to the CAO Chief of QA and the ACO.

4–508—INSTRUCTIONS FOR COMPLETING DD FORM 1715

a. This form is designed to enable the QAR to record contractor quality deficiencies and furnish official notification to contractors when CA is required. The form is designed to also include the contractor's reply indicating CA and the QAR's statement as to the verification and evaluation of contractor's action. Flexibility is permitted in adapting the form to local conditions.

b. DD Form 1715 will normally be completed as follows:

(1) *Block 1. Date.* Enter the date the form is prepared.

(2) *Block 2. Reference Number.* Enter the control reference number for identification purposes.

(3) *To.* Enter the name of the contractor and the responsible contractor quality control supervisor.

(4) *From.* Enter the name of the QAR.

(5) *Block 3. Discrepancies Requiring CA.* Enter complete identification of the deficiency and to the extent possible the contract(s) affected.

(6) *Block 3A. Effect on Production Schedule.* Indicate yes or no.

(7) *Block 4. Due Date for Reply and Signature.* When corrective action as to cause is required, indicate number of days. Enter signature.

(8) *Block 5. Contractor's Reply.* Contractor's reply/corrective action on discrepancies reported in

block 3 to be entered by contractor. When contractor reply is received in separate correspondence, form or report the QAR will attach the reply to the file copy of this form.

(9) *Block 5A, 5B, and 5C. Typed or printed name, signature and date.* Self-explanatory.

(10) *Block 6. Verification.* Enter a statement of the actions taken to verify or evaluate the corrective actions taken by the contractor.

(11) *Block 6A, 6B, and 6C. Typed name, signature and date.* Self-explanatory.

(12) *Block 7. Followup Action.* Finalization or closeout of any action on discrepancies as required.

SECTION V

GOVERNMENT PQA AT SUBCONTRACT LEVEL

PART 1

CONCEPTS AND SPECIAL PROCEDURES

5-100—PURPOSE. To implement ASPR 14-103.1 and 14-407 which establish policy and procedures to be followed when supporting contract administration is required to administer a portion of a contract being performed at a different location.

5-101—BASIC CONCEPTS

a. Government PQA actions at the subcontract level do not relieve the contractor of any of his responsibilities under the contract and do not establish any contractural relationship between the Government and subcontractor.

b. Government PQA at subcontract level is performed only for the benefit of the Government and is never performed to assist a prime contractor in controlling his suppliers.

c. The techniques discussed herein are equally applicable to purchases from subcontractors, vendors and procurements from dislocated operations of the prime contractors which require the use of instruments such as interplant work orders.

5-102—SPECIAL PROCEDURES

a. QAR Responsibilities. QARs at prime contractor facilities are responsible for review of subcontracts for clarity and completeness of quality requirements. During this review the QAR should assure that the specified quality level is appropriate for the material being purchased (e.g. MIL-Q-9858A is not required to be extended to subcontracts when a lesser quality requirement is suitable), and all necessary technical and safety requirements, inspections and tests are clearly defined. The QAR shall determine if conditions exist where PQA at subcontract level may be required.

b. Conditions for Requesting PQA at Subcontract Level.

(1) *Direct Shipments.* When the subcontracted item is to be shipped directly from the subcontractor's plant to the using activity, the QA element cognizant of the prime contractor's location is required to identify work to be performed, except on Automatic Delegations, paragraph 5-102c(9). The QAR will identify specific procedures, inspections or tests which are to be verified or evaluated, including PCO imposed Government inspections. The QAR at the prime contractor's plant may issue a letter to the QAR at the subcontractor's plant delegating MRB authority, if consistent with the requirements of the prime contract, and the prime contractor has authorized the subcontractor to use MRB procedures.

(2) Selective Evaluations (ASPR 14-407.3). Some required PQA actions in addition to direct shipments can not be accomplished at the prime contractor facility and may be required to be performed at subcontract level. Such actions are limited to: PCO imposed Government inspection requirements; contractually required Government evaluations, inspections and tests; requirements of this manual (such as witnessing first article tests, verification of OQE, verification of source of precision components, etc.; customer complaint investigation of material shipped from a subcontractor which was subjected to Government inspection and; specific PQA actions on subcontracts for major subsystems or systems as described in subparagraph (3). In these cases selective evaluation may be requested by the prime contractor QAR. Specific characteristics, processes, and procedures to be veri-

fied, tests to be performed or witnessed, records, reports, certificates to be evaluated, and duration of the required PQA actions must be contained in the request.

(3) Major Subsystems/Systems. Subcontracts for major subsystems or systems normally contain MIL-Q-9858A Quality Program Requirements or MIL-I-45208A Inspection System Requirements. When this type of material is included in a subcontract the QAR must determine the prime contractor's method of controlling his subcontractor and the means of evaluating the effectiveness of these controls. The prime contractor's quality program or inspection system documentation is required to describe the controls to be applied, the objective evidence of control to be obtained from the subcontractor and the means to determine validity of the required data. Based upon this review the QAR shall determine if the controls are adequate to assure product quality or if additional assurance through PQA at subcontract level is needed. When necessary the QAR may request PQA to be conducted at subcontract level for compliance with MIL-Q-9858A or MIL-I-45208A in accordance with the requirements of this manual, or he may request selective evaluation in accordance with subparagraph (2).

c. Processing Requests for PQA at Subcontract Level.

(1) When conditions stated in subparagraph b exist the prime contractor QAR may request PQA at subcontract level.

(2) QAR Correspondence, DD Form 1232, will be prepared by the prime contractor QAR and forwarded with a copy of the purchasing document to the CAO cognizant of the subcontractor as designated in DoD 4105.59H DoD Directory of CAS Components. An advance copy may be forwarded direct to the subcontractor QAR. The PQA request must contain specific PQA actions to be performed except when PQA is requested for procurement of major subsystems or systems. A copy of the request will be provided to the prime contractor. Changes to the purchasing document will be processed in a similar manner.

(3) The QAR will request the prime contractor to insert an appropriate access clause in his subcontract. The applicable Government Inspection Requirement clause contained in MIL-Q-9858A or MIL-I-45208A should be used when control of shipments is necessary. The following clause for selective evaluation is suggested when shipments are not required to be controlled:

SUGGESTED CLAUSE FOR SELECTIVE EVALUATION

"During performance on this order, your quality control or inspection system and manufacturing processes are subject to review, verification and analysis by authorized Government representatives. Government inspection or release of product prior to shipment is not required unless you are otherwise notified."

(4) When the decision to request Government PQA actions at subcontract level is made after the subcontract is released, the contractor will be requested to amend the subcontract to include the appropriate requirement for Government PQA action at source.

(5) When a prime contractor identifies a subcontract source outside CONUS, the CAS component should immediately notify the PCO. A copy of each request for support PQA action will be sent to the PCO through the ACO. The QAR shall make sure that the prime contractor has positive control over foreign sources. This may require seperate procedures to control these sources. The geographical and plant cognizant listings for requesting PQA assistance outside the United States, except for petroleum products, are contained in DoD 4105.59-H, section II, part 2. The listings for petroleum products are contained in section II, part 3.

(6) Direct communication, either by letter or telephone, between CAS components is encouraged and is essential for effective enforcement of contract requirements and proper assurance of product quality. Incidents of noncompliance to the requirements of the subcontract are cause for corrective action. The QAR at the subcontractor's plant should take corrective action in accordance with section 4, part 5 of this manual. If the purchase order does not contain clear or adequate quality requirements, or

some other deficiency in the order is noted by the QAR at the subcontractor facility, he should notify the prime contractor QAR by use of DD Form 1232. In those instances where the QAR at the subcontractor's facility knows that the prime is maintaining satisfactory control of his subcontractor or if the conformance of the item can be determined upon receipt, he should challenge the request for PQA. This can also be accomplished by use of DD Form 1232.

(7) In the case of ambiguities, conflicts or other problems in the PQA request or performance in accordance with the request, the CAO having cognizance of the subcontractor will advise the issuing activity by direct contact. Expeditious action will be taken to resolve the problem.

(8) The QAR at prime contractors' facilities will advise QARs at suppliers' plants, whenever the prime contractor is not assessing and reviewing control of quality by his suppliers. The notice will indicate the level of corrective action being taken and when appropriate request that acceptance or release of shipments be discontinued.

(9) *Automatic Delegation.* When the prime contract identifies points of manufacture at locations other than that of the prime contractor, each of the CAO's cognizant of the manufacturing locations will receive two copies of the prime contract from the PO. The QA element of the prime CAO is not required to request PQA at the subcontract level from these manufacturing locations. Upon receipt of the contract, the QAR at the manufacturing locations will plan his program in accordance with the provisions of the prime contract and this manual. Acceptance of supplies will be based on prime contract requirements, when direct shipment is to a Government activity. Differences between the prime contract quality requirements and the prime contractor's purchase document will be brought to the attention of the CAO cognizant of the prime contractor even though the subcontractor, in this instance, is a party to the prime contract.

d. *Shipping Documents.* On direct shipments being made to a Government activity, the subcontractor will be provided DD Forms 250 by the prime contractor or will be instructed by the prime contractor to prepare DD Forms 250. The QAR will sign indicating PQA or PQA and acceptance at source in the same manner as if the shipment were being made from a prime contractor's facility. When the subcontracted items are being shipped to the prime contractor's facility by use of a commercial shipping document and shipments are required to be controlled, the QAR will indicate on the shipping document that the required PQA action has been accomplished in accordance with ASPR, appendix I, paragraph I-201.

e. *Sources of Precision Components.*

(1) ASPR section I, paragraph 1-2207.4 establishes DoD policy for procurement of precision components for mechanical time devices. It requires insertion of ASPR 7-104.46 in contracts for certain federal supply classes. Some contracts containing this clause will identify and list those component parts of the contract line items which are considered to be precision components. These contracts will also list the suppliers from whom the contractor has indicated he intends to purchase the precision components.

(2) Other contracts containing ASPR clause 7-104.46, may not identify the precision components or the sources from which the contractor proposes to purchase them. Upon receipt of each such contract, the ACO will be requested by the QAR to obtain a listing of the components considered to be precision components from the PCO. Upon receipt of the listing, procedures described herein apply.

(3) Subcontracts and purchase orders, for precision components or assemblies containing precision components issued by the prime contractor in performance of a contract containing ASPR clause 7-104.46 will be reviewed to assure that the clause is included in the purchase orders.

(4) If the contract requires certification from subcontractors that parts furnished and components manufactured are from domestic or Canadian sources, the QAR will verify that this requirement is included in subcontract documents.

(5) For all tiers of subcontract activity, a selective evaluation will be requested on each purchase of precision components or items containing precision components for time devices. The request will solicit verification that the precision com-

ponents are being manufactured in accordance with contract terms.

f. *Jewel Bearings.* ASPR section I, paragraph 1-2207.2 establishes DoD policy and procedures for procurement of jewel bearings. ASPR clause 7-104.37 is required to be incorporated into contracts for selected Federal supply classes and groups. The prime contractor is then required to include the clause in every subcontract and purchase order issued against the contract unless he knows that supplies being purchased to not contain jewel bearings. During normal review of contracts for quality requirements, QA personnel should be alert to the requirements for ASPR clause 7-104.37. If the clause has not been included in the contract when jewel bearings will be used, DD Form 1716 should be issued. Selective evaluations applicable to precision components, subparagraph e, are also required for jewel bearings.

g. *Ball Bearings.* ASPR section I, paragraph 1-2207.3 establishes DoD policy and procedures for procurement of Miniature and Instrument Ball Bearings. It requires ASPR clause 7-104.38 to be inserted in contracts for items containing miniature and instrument ball bearings to the maximum extent possible. Accordingly QARs should watch for the inclusion of this clause in subcontracts as prescribed in ASPR 1-2207.3. DD Form 1716 should be issued if it is not included in the contract when appropriate. Selective evaluations applicable to precision components, subparagraph e, are also required for Miniature and Instrument Ball Bearings.

PART 2

SUBCONTRACTOR STATEMENTS OF QUALITY

5-200—PURPOSE. To describe acceptable content of Statements of Quality and OQE from subcontractors and vendors.

5-201—GENERAL. Complete supplier inspection data may not be furnished with all material. Suppliers statements of quality or statements of finding should be statements of fact pertaining to the quality of the product or service based on observations, measurements, or tests which can be fully verified. Statements of quality may be provided for economic or other reasons but should completely summarize OQE or reference the availability of OQE in the suppliers' file. Statements of quality are not to be confused with suppliers COC which may be employed as a proper element incident to acceptance of supplies or services.

5-202—STATEMENTS OF QUALITY. When a contractor's purchase order does not require submission of complete inspection and test data with materials or products purchased, the supplier may submit a statement of quality to certify that all required inspections have been performed. This statement is not required to be notarized, but it must be signed by an authorized agent of the supplier or laboratory with appropriate identification of the position held by the signer. Acceptable statements of quality should identify completely the material or item by lot number, production date, or item serial number; state the specification or drawing number, revision, and date; the grade, type, or value for which the product was inspected; the number of specimens inspected; whether the test was a go, no-go, or variable test; the location and date of inspection; and where OQE will be available for review by contractor or Government personnel. When OQE is supplied with the statement of quality, the statement should reference attached OQE. If complete, actual inspection data are supplied with the material or product, a statement of quality is not mandatory unless required by the purchase order. Blanket type statements are not acceptable. Examples of unacceptable statements follow:

a. The material meets all applicable specifications, drawings, or contract requirements.

b. The material is a formula number or trade name which meets specification number XXXXXX. (Note that for some types of proprietary materials such a statement may be acceptable).

c. The material (formula or trade name) is on the QPL.

d. Any statements of belief rather than fact, such as "to the best of my knowledge and belief. . . ."

e. The material was previously accepted by the Government.

f. Statements signed by unidentified persons.

5-203—REVIEW OF STATEMENTS OF QUALITY. The contractor should review all data submitted with material to ensure that purchase order or contract requirements have been met. The QAR must review the contractor's procedures for reviewing this data, assure that the contractor does review the data, and review as many of the statements of quality as necessary to assure that the contractor has accomplished his review.

5-204—VERIFICATION OF STATEMENTS OF QUALITY. The contractor is responsible for assuring that a statement of quality as supplied by a subcontractor or vendor truly represents the inspection performed upon the product. Frequently, the contractor will utilize his own laboratories to verify the accuracy of a statement of quality involving physical or chemical examinations. A Statement of Quality involving dimensional or functional characteristics may be verifiable by the contractor's own inspection activities. Under either

of these circumstances, it is generally not necessary for the QAR to request assistance from the subcontract level for the purpose of determining the accuracy relative to statement of quality. The QAR should consider the necessity for assistance from the subcontractor or vendor levels when the authenticity of the statement of quality is in question and the contractor: Does not have the capability to conduct verification; and cannot satisfactorily demonstrate control over his subcontractor/vendor (through requests for independent laboratory examinations or on-site verifications). Where the results of feedback from the QAR at subcontractor level indicate that a statement of quality as provided to the contractor is inaccurate, the prime QAR should immediately report his findings to the prime contractor with the request that the contractor assure the correction of the products on hand that may be effected, and that the required corrective action involving the subcontractor or vendor be taken that will assure that subsequent statements of quality accurately reflect the conditions of the product. This may involve a change of source, or it may require the contractor to develop the capability for verifying submitted statements of quality or employ the services of an independent laboratory for this purpose.

SECTION VI

FIRST ARTICLE APPROVALS

6-100-PURPOSE. To outline the responsibilities of the QAR, the QA Supervisor, and the CAO QA element, when contracts require first article approval as provided in FAR and DFAR, part 9, subpart 9.3.

6-101-GENERAL. First article testing is used to assure that the contractor's design, materials, manufacturing processes, and quality controls are collectively capable of producing an item which conforms with all the contract requirements for acceptance. When the PCO decides that first article testing is necessary, the contract will include a clause identifying the testing requirements, and specifying whether the contractor or the Government will be conducting the tests. The contractor is always responsible for furnishing an item in conformance with all contract requirements, even when the contract provides that the Government will conduct first article testing. However, the responsibilities of the QAR may vary significantly, depending on whether the contract provides for contractor or Government first article testing.

6-102-PROCEDURES

a. Contract Review. Contracts containing requirements for first article approval must be promptly identified by the QAR upon receipt. The QAR must recognize the first article requirements very early, in order to initiate the appropriate Government CQA actions.

b. Requesting Technical Assistance. The QAR will request technical assistance before scheduling or participating in postaward conferences, and before performing inspections or witnessing contractor inspections of first article units. He will direct all such requests to his supervisor.

c. QA Postaward Conference. The QAR will conduct a QA postaward conference with the contractor whenever the contract includes any type of requirement for first article approval. This will be accomplished as part of the ACO scheduled postaward conference, if one is held. If the ACO decides not to schedule a postaward conference, it will be accomplished separately by the QAR (see DLAM 8200.1, Section III for complete QA Postaward Conference procedures and requirements). As a minimum, the QAR will review in detail with the contractor the first article clauses in the contract to assure that the contractor understands exactly what is required.

d. Providing Technical Assistance. The QA supervisor will receive all requests from QARs for technical assistance. After considering all of the circumstances, he will decide what, if any, technical assistance will be provided to the QAR. He will keep records of all such requests for technical assistance received and actions taken on each request. Technical assistance will normally be obtained from the CAO QA technical element. However, when the QAR's supervisor is familiar with the commodity and experienced with first articles, he may elect to provide whatever technical assistance is considered necessary.

e. Inspection of First Article Units.

(1) When the contract provides that the Government will conduct the first article approval testing, the QAR will inspect those characteristics identi-

fied by QALI, if any. The QAR will also, as a minimum, inspect any characteristics which he has reason to believe may not be effectively controlled by the contractor. When the QAR will be performing such inspections, he must advise the contractor in writing, as early as possible, to hold the first article units for QAR inspection at the desired fabrication/inspection points. The QAR will accomplish these inspections independently or by witnessing contractor inspections.

(2) When the contract provides for the contractor to conduct the first article approval test, or a portion thereof, the QAR will independently inspect or witness the contractor inspection of every characteristic that the contractor is required to include in the first article approval test. This QAR inspection will be conducted on every first article unit. Deviation from this policy must be authorized in writing by the PCO.

f. Inspection of the First Article Test Report. Where the contractor is responsible for the performance of required inspections and tests on the first article and he is required to provide a report of the results of these inspections and tests, the contract should require him to indicate the specification, drawing, or other test requirement that was used as the basis for the inspection or tests. Before authorizing delivery of such a report, the QAR will inspect the report to verify that it contains all required identification information relating to the first article such as contract number, contractor, facility, and accurately details test results in quantitative terms for the tests, and the derived values.

g. Recording of Inspection Results. The QAR will record the results of all inspections of first article units and test reports by completing DD Forms 1711, in accordance with paragraph 4-406 of this manual.

h. Correction action. The contractor shall correct any nonconformances observed in first article units or test reports. The QAR will formally request corrective action from the contractor whenever he independently observes nonconformances in a first article or contractor departures from the contractually specified first article test procedures. Method "B" will be the minimum level of corrective action used, and the CAO production element will be furnished copies of all such requests for corrective action.

i. Reporting QAR Inspection Results. Unless otherwise specified in the contract or by a QALI from the PCO, the QAR will use a DD Form 1222 to forward the contractor's first article test report and/or to report the results of his inspection of the first article units. That DD Form 1222 will be separate from and in addition to any contractor report which may or may not be in the form of a DD Form 1222 signed by the QAR and stamped with the QAR's partial (circle) inspection approval stamp. The QAR will include the following minimum information in his DD Form 1222:

(1) Names, activities, and telephone numbers of individuals providing technical assistance to the QAR and other Government personnel witnessing or participating in the first article approval test.

(2) A statement identifying the characteristics actually inspected or witnessed by the QAR. Alternatively, the QAR may attach copies of his DD Forms 1711 if these forms clearly identify the characteristics actually inspected or witnessed by the QAR.

(3) Detailed description of any nonconformances in the first article units or test reports or departures

from the contractually specified first article approval testing procedures (if applicable).

(4) A statement identifying by name, title, activity, and telephone number the ACO or PCO authorizing the shipment of nonconforming first article units or test reports (if applicable).

(5) A recommendation for approval or disapproval must be included when the contract requires contractor conducted first article testing. However, disapproval will always be recommended whenever any nonconformance in the first article units or deviation from the first article approval test procedure is observed.

j. Shipment of First Article Units. Immediately before shipment of a first article or first article test report, the QAR shall request the ACO provide the consignee with the notice and advice required in FAR 9.307. The QAR will not authorize or encourage the contractor to ship first article units or test reports containing known or suspected nonconformances, unless and until specifically directed to do so by the ACO or by PCO. The QAR will report immediately to the ACO indications that the contractor has or intends to ship such first article units.

k. First Article Approvals/Disapprovals. Approval or disapproval authority is retained by the PCO, unless specifically delegated to the QAR or ACO in writing and agreed to by the CAO.

(1) PCO Retains Approval/Disapproval Authority. When the PCO retains approval/disapproval authority, the notification to the contractor as to the approval, conditional approval, or disapproval of the first article is the responsibility of the PCO. Where approvals, conditional approvals, or disapprovals are received from other than the PCO, the QAR will forward a copy to the appropriate ACO for his coordination with the PCO. Formal notice to the contractor will be signed by the PCO or ACO.

(2) QAR or ACO is Delegated Approval Authority. Where the PCO elects to delegate first article approval authority to the QAR or ACO, formal notice to the contractor of first article approval/disapproval will be signed by the ACO or the head of the CAO QA element, as appropriate. If the CAO is delegated approval authority without specifically identifying the QAR or the ACO, the notice of first article approval/disapproval will be signed by the ACO.

l. PCO Approval or Conditional Approval of a Nonconforming First Article. The QAR will notify his supervisor whenever a PCO or ACO approves a first article unit containing nonconformances identified by the QAR in his DD Form 1222. The QA supervisor will escalate the matter, through normal channels, to the head of the CAO for his review and appropriate action.

m. Use of Approved First Articles as a Manufacturing Standard. Approved first article units sometimes serve as a manufacturing standard for production units, but only when specifically stated in the contract. When this occurs, the first article may be useful in evaluating the adequacy of production units with respect to technical requirements, especially if controversy develops during production. But in no event will the approval of a nonconforming first article be construed as authorization to accept production items containing any nonconformance with the contract requirements.

n. Changes in Contractor Facilities/Processes/Methods/Materials. Some contracts will require that the first article units be manufactured using the same facilities, production processes, methods, and materials as the production units. When this or similar requirements are included in the contract, and the QAR observes any

changes that may reasonably be expected to affect product quality, the QAR will immediately advise the ACO of the circumstances. The QAR should withhold formal acceptance pending further direction from the ACO.

o. Acceptance and/or Shipment of Production Quantities. Before accepting and/or authorizing shipment of any production quantities, the QAR must verify that contractor corrective actions resulting from the first article test have been implemented.

SECTION VII

ENGINEERING CHANGES

7–100—PURPOSE. To provide instructions to the QAR and supporting QA technical and engineering personnel relative to contractor's and Government's role and responsibilities in the area of Engineering Changes.

7–101—EXCEPTIONS TO ENGINEERING CHANGE/ENGINEERING CHANGE PROPOSAL (ECP) PROCEDURES

a. Processing of VECP is excluded from the provisions of this section. VECPs received by the QAR directly from the contractor will be promptly forwarded to the responsible CAO element.

b. On NASA procurements, the CAO will support the PCO or COR in the technical and administrative aspects of ECPs to the extent delegated.

c. Provisions of this section are not applicable to engineering changes generated by the contractor prior to the establishment of a formal base line, unless otherwise required by the purchasing activity. Contracts invoking MIL-STD-480 will define the base line (functional, allocated or product), documentation and change control requirements consistent with the scope of the program and the complexity of the item being procured. In some cases, the use of the provisions of this section may be advantageous to the contractor and the CAO prior to the establishment of a formal base line.

d. The procedures contained in this section are directed to the QAR and the QA element of the CAO. Departmental/agency policy or procedures may assign responsibilities for evaluating, coordinating, approving or recording ECPs to other organizational elements. In such case departmental/agency requirements take precedence over the procedures contained herein.

7–102—GENERAL INFORMATION

a. Engineering change procedures should not be used to obtain approval for nonconforming material.

b. Recurring class II changes on a specific product/product line may indicate a marginal design or poor manufacturing practices. The CAO will evaluate recurring class II changes to determine whether a combination of these changes should be more appropriately classified in the class I category.

c. An engineering change which is class II to the originator may be class I in its impact on another contractor(s), when two or more contractors are producing items to the same mandatory detail drawings.

d. Effective implementation of the provisions stated herein require that the QAR make maximum use of the available highly specialized technical skills at various levels within the CAO. QARs will be advised by their supervisors where required skills are available within the CAO. QAR requests, oral or written, for specific engineering or specialists technical skills will be honored on a timely basis.

e. Application of MIL-STD-480 and MIL-STD-481.

(1) *MIL-STD-480.* This standard will be used by prime contractors and Government activities for proposing engineering changes to configuration items which were developed, designed, or modified specifically for DoD activities, and to control the form, fit, and function of privately developed items used in configuration items.

(2) *MIL-STD-481.* This standard will be applied to contracts for procurement of multi-application or standard items which were not developed as subdivisions of a specific system; items fabricated in accordance with mandatory detail design which was not developed by the fabricator; and privately developed items, when the purchasing activity determines that the application of change control to such items is necessary and that the short form ECP

is adequate.

f. The procedures prescribed herein were prepared for use with MIL-STD-480 and 481 but may be applied with minimal variations to other change control requirements.

7-103—EVALUATING, COORDINATING AND RECORDING ENGINEERING CHANGES

a. The QAR shall maintain a copy of each ECP received except for class II ECPs reviewed only for classification (as required by paragraph 7-104b). These ECPs may be maintained by the contractor after QAR review. ECPs reviewed only for classification will be annotated with date of review and reviewer's signature.

b. DD Form 1998 will be used by the CAO to record routing, comments, and recommendations when the QAR does not have approval/disapproval authority. DD Form 1998 will also be used as the approval/disapproval document if some other record is not specified.

(1) DD Form 1998 is normally initiated by the QAR. As a minimum, one copy will be prepared for the QAR's file and an original and one copy are to be attached and forwarded with the ECP. When the QAR is authorized to approve/disapprove the ECP, a copy of DD Form 1998 will be forwarded to the CAO contract administration element.

(2) Routing and completion of DD Form 1998 is to be accomplished in accordance with the following:

(a) Item 1. *Date of Request:* Show date of contractor's request.

(b) Items 2-4. *Identification:* Self-explanatory.

(c) Item 5. *Class of ECP or Type of Nonconformance:* See the glossary for classification if not otherwise defined. Add any additional classification required such as critical, major or minor.

(d) Item 6. *Request or ECP Number:* Unless the contract specifies otherwise, identify each type of request by using the last group of numbers on each contract and serial number. As an example: 9428-1, 9428-2, and 9428-3. Start a new series of numbers on each contract. Also include special coding, as required.

(e) Item 7. *Contract Number:* In addition to the contract number, show purchase orders or other identification needed.

(f) Item 8. *QAR:* Check appropriate blocks to show actions taken and recommendations. NOTE: Applicable routing blocks will normally be completed by the initiator and the balance of an item will be completed by the authorized recipient.

(g) Item 9. *Routed to QA Staff or Engineer:* Concurrence in classification, comments, and recommendations will be obtained from a QA technical support/engineer element when routed to the CAO contract administration element or PCO. Normally, the QAR will route the change request package plus DD Form 1998 through the cognizant QA office responsible for providing technical support to the assigned QAR.

(h) Item 10. *Routed to CAO Production Office:* Class 1 ECP's will be routed through the CAO production element. Other contractor requests will not be forwarded to CAO production elements unless specific input is required.

(i) Item 11. *Routed to ACO:* ECP's will be routed to the CAO contract administration element when the ACO has approval/disapproval authority or authority is outside the CAO.

(j) Item 12. *Routed to Other:* DD Form 1998 may be used in obtaining recommendations from other offices when additional input is required. Special contract routing requirements will be followed. As an example, the contract may require routing of ECP's through a technical office located apart from the procuring office.

(k) Item 13. *Routed to PCO:* Forwarding to the PCO via the ACO will be required when approval/disapproval authority is not delegated to the CAO.

(l) Item 14. *Comments and/or Remarks:* Comments are required with exceptions, nonconcurrences, disapproval or any other significant conditions affecting the contractor's request. Comments concerning delays in processing are requested. All comments and/or remarks are to be identified to the contributor and systems involved.

(m) Item 15. *Concluding Decision or Action:* Completion is to be by the designated approval/disapproval authority when DD Form 1998 is used as the approval/disapproval document.

(n) Item 16. *Modification of Contract:* Same as Item 15. If a modification to the contract is required, the modification number or notification/action to initiate modification is to be shown.

(o) Item 17. *Typed Name and Title, Signature and Date:* Same as Item 15.

(p) *Distribution of Copies:* When approval/disapproval is not by the QAR, distribution of the completed package including DD Form 1998 will be determined by the ACO or PCO.

7–104—AUTHORITY FOR APPROVING ENGINEERING CHANGES

a. Authority for approval of ECPs is vested in the purchasing activity. The purchasing activity may delegate that authority to the CAO. When authority is delegated, the QAR approves/disapproves class II ECPs unless the delegation specifically requires approval by the ACO. The purchasing activity may also delegate authority for the ACO to approve/disapprove class I ECPs. The QAR never approves class I ECPs.

b. MIL-STD-480, where the contractor has design authority, permits the contractor to implement class II ECPs without Government approval. The QAR, under these conditions, reviews the ECPs for classification only.

c. Except in the one instance in paragraph 7-104b, receipt of Government approval, either by CAO approval or by contract modification, is the only authority for the contractor to effect an ECP. The contractor will be advised promptly in writing of ECP disapprovals including reasons for the disapproval.

7–105—PROCESSING ENGINEERING CHANGES/ECPS WHEN SUCH REQUIREMENT IS INVOKED IN THE CONTRACT.

a. The provisions of this paragraph generally apply to all class I or II ECPs prescribed by the Military Services.

b. Unless otherwise specified in the contract, the prime contractor will submit to the QAR each ECP (class I or class II) including those from subcontractors. Disagreements between prime and subcontractor will be negotiated by the prime contractor.

c. The QAR shall give preference to ECPs having a priority of emergency or urgency.

d. The QAR shall:

(1) Review the ECP for accuracy and adequacy of information, proper classification for class II ECPs, and provide comments as appropriate on the effectiveness and necessity of the proposed ECP with respect to design goals, safety, correction of design deficiencies and improvements, and any other significant factors.

(2) On each class II change, review the ECP for concurrence in classification. When an ECP proposed as class II is considered in reality to be class I, take appropriate CA with contractor and withhold acceptance of any items incorporating the change. When contracts require only Government concurrence in classification, the return of a signed copy of the ECP may be used as evidence of concurrence. The QAR will normally conduct this review within three working days after receipt of the ECP. Expeditious notification of any nonconcurrence will be provided to the contractor in writing.

(3) Request technical support or supervisory assistance when needed to provide a comprehensive appraisal and technical evaluation of the contractor's ECP.

(4) Approve/disapprove the ECP when the QAR has the authority.

(5) When the QAR does not have approval/disapproval authority, initiate DD Form 1998 in accordance with paragraph 7-103.

7–106—PROCESSING ENGINEERING CHANGES WHEN SUCH REQUIREMENT IS NOT INVOKED IN THE CONTRACT

a. In the absence of any contractual provisions regarding the processing of ECPs, the contractor may submit but need not classify ECPs as class I or class II. The ECPs will be submitted to the QAR by means of a letter or on contractor's form containing as a minimum, the following information:

(1) Complete identifying information as applicable, such as drawings, documents affected, and contract number.

(2) Description of change.

(3) Need for change and problem which the requested change will solve.

(4) Effect on cost and delivery schedule.

(5) Impact of change on higher configuration item(s), if applicable and known.

b. The QAR shall review and process ECPs as required in paragraph 7-105 for class I ECPs.

7-107—SUBCONTRACTOR CLASS II ENGINEERING CHANGE REVIEW. Class II engineering change review functions may be delegated to subcontractor level only when MIL- STD-480 is contractually authorized. When a prime contractor authorizes a design responsible subcontractor to process class II engineering changes, the QAR may delegate class II engineering change functions as part of the total delegation to the Government representative cognizant of the subcontractor, when such action is considered advantageous and when:

a. The subcontracted supplies require Government procurement quality actions at source.

b. The subcontractor agrees to comply with subcontract provisions relative to the proposal, justification, and approval of class II ECP's.

c. Subcontractor's engineering change activity is effectively controlled to assure that the engineering changes do not conflict with criteria specified by the prime contractor for the subcontracted supplies.

d. The prime contractor periodically audits the effectiveness of the subcontractor's class II engineering change system.

SECTION VIII

NONCONFORMING SUPPLIES AND SERVICES

PART 1

CONTROL OF NONCONFORMING SUPPLIES

8–100—SCOPE. These procedures apply to CAO personnel and are applicable to all DoD contracts unless prohibited by contract or letter of instructions. When MIL-STD-480 and MIL-STD-481 are contractually authorized, waivers and deviations will be processed in accordance with procedures contained therein. MIL-STD-480 and MIL-STD 481 supersede the procedures in part 2 of this section, except for paragraphs 8–203 and 8–204 below.

8–101—PURPOSE. To implement ASPR section XIV, paragraph 14-406 by providing procedures for controlling the disposition of nonconforming supplies.

8–102—GENERAL

a. Contracts establish technical requirements for the quality of supplies through reference to plans, drawings, specifications, or purchase descriptions. Supplies containing departures from such requirements are termed nonconforming supplies. Departures from contractor imposed requirements which are not specifically covered by contract must be judged individually on the basis of the effect, if any, on contract requirements for the quality of supplies. Such departures may or may not cause the supplies to be nonconforming for Government acceptance purposes.

b. Final decisions regarding acceptance of nonconforming supplies are solely the prerogative of the Government.

c. The act of offering nonconforming supplies to the Government should be an exception.

d. The act of consistently offering nonconforming supplies to the Government indicates:

(1) A degradation in the contractor's control over product quality.

(2) A deficiency in contract technical requirements.

e. Repeated tender of nonconforming supplies or services, including those with only minor defects, should be discouraged by appropriate action such as rejecting the supplies or services whenever feasible and documenting the contractor's performance.

f. Although deviations are not normally considered as nonconforming supplies, the procedures herein are applicable.

8–103—DOCUMENTATION OF CONTRACT FILES

a. On DoD procurements, QARs shall provide the Contract Administration element of the cognizant CAO a copy of each approved MRB and Waiver action which involve acceptance of minor (type II) nonconformance and Government representative estimates that the contractor saved $50.00 or more in producing the nonconforming supplies or performing the nonconforming services. On non-ACO assigned contracts, the approved actions will be provided to the PCO.

b. In the case of minor (type II) nonconformances, the contract normally will not be modified except when the CAO estimates that the contractor saved $50.00 or more in producing the nonconforming supplies or performing the nonconforming services.

8–104—COMMUNICATION

a. The ACO is responsible for coordination with the purchasing office in ACO assigned contracts.

b. QA personnel will communicate with the pur-

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chasing office in accordance with locally established procedures on non-ACO assigned contracts.

c. The QAR shall maintain a copy of each waiver or deviation request received. CAO routing, comments, recommendations and approval/disapproval will be documented on DD Form 1998. The instructions in paragraph 7-103 are applicable except:

(1) Waiver or deviation will be substituted for ECP.

(2) Routing to the CAO Production element is not required for waivers or deviations except where special requirements exist.

8–105—IDENTIFICATION OF NONCONFORMING SUPPLIES

a. Nonconforming supplies and services will be identified as type I (affecting major areas) or type II (minor and not affecting any of the major areas) according to criteria contained in the Glossary.

b. When one or more departures exist on a single item, each departure is evaluated and identified. If major nonconformances exist on the same item, the nonconforming supplies will be identified as type I.

c. When minor nonconformances exist on a single item, consideration should be given whether the accumulative aspects of these nonconformances should, in reality, be considered as major.

d. When the QAR is uncertain as to the proper identification for the nonconforming supplies, it must be considered major until positive determination is reached through consultation with cognizant technical or contract personnel of either the CAO or the PO, as appropriate.

8–106—AUTHORITY FOR ACCEPTANCE OF NONCONFORMING SUPPLIES

a. *Major Nonconformance*

(1) On DoD procurements, authority for acceptance of supplies and services which affect one or more of the major areas, is vested in the PCO based upon information furnished by the contractor and comments provided by the CAO. Generally, the CAO information will be provided in writing except for urgent situations where it may be furnished orally and confirmed in writing.

(2) On NASA procurements, authority for acceptance of major nonconforming supplies and services is retained by the NASA PCO. Acceptance or repair of such supplies and services requires approval of the PCO or the COR when delegated.

b. *Minor Nonconformance*

(1) On DoD procurements, authority for acceptance of minor nonconforming supplies and services is automatically vested in the CAO except when the authority for such acceptance is specifically withheld in writing by the PCO.

(2) On NASA procurements, the MRB procedures may be implemented when establishment of MRB is contractually authorized and the CAO is delegated MRB authority. The scope of CAO MRB authority is limited to that set forth in the letter of delegation. Normally, it is to determine or recommend disposition of the nonconforming supplies. It may, however, involve acceptance authority in some instances. Acceptance of such supplies when MRB is authorized does not require contract modification unless determined otherwise by the cognizant NASA PCO or COR.

8–107—METHOD FOR REQUESTING ACCEPTANCE OF NONCONFORMING SUPPLIES

a. On DoD procurements the methods of acceptance are:

(1) Submission of the nonconforming material to the local MRB for review, disposition, or acceptance if determined to be in the best interest of the Government.

(2) Contractor submission of a formal request for waiver to the QAR/CAO for evaluation and acceptance or processing the request to the PO through ACO channels with appropriate approval/disapproval recommendations.

b. On NASA procurements, the methods of acceptance are:

(1) Through the local MRB in accordance with part 3 to the extent authorized by the contract and the NASA Letter of Delegation. Disposition of type I nonconformances are recommended by the MRB to the NASA Contracting Officer; agency comments and recommendations shall accompany such requests.

(2) Through formal Request for Waiver. When

NHB 5300.4(1C) is invoked without MRB authority, request for waiver procedures may be utilized by the contractor for submission to the PCO or COR in accordance with part 2.

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PART 2

REQUEST FOR WAIVER

8-200—PURPOSE. To provide guidance on preparation and processing of a request for waiver. These procedures are applicable on DoD and NASA contracts unless otherwise specified.

8-201—CONTRACTOR'S REQUEST FOR WAIVER

a. *DoD Procurements*

(1) The contractor may elect to submit a request for waiver to the CAO or PO, as appropriate, when the PO has withheld authority for acceptance of the minor nonconformances, the nonconformance affects one or more of the major areas and determined to be major, or the nonconformance is minor, but a materials review procedure has not been established.

(2) It is the contractor's prerogative to submit requests for waiver and the QAR must never refuse to process the request. For example, the contractor may desire to resubmit nonconforming supplies which have been rejected by a MRB or determined by a MRB to exceed the Board's acceptance prerogative. However, pertinent comments or recommendations to the request should be provided by the QAR.

b. *Government Request.* In unusual circumstances and under certain type contracts such as CPFF, it may be to the Government's benefit to consider acceptance of nonconforming supplies that have been produced and the contractor has not elected to submit a Request for Waiver for their acceptance. For example, if the raw material is Government-furnished and is highly expensive, such as silver or gold, and the contract is CPFF, the contractor may not submit a request for acceptance of the nonconforming supplies since he has no incentive to do so. In such cases the QAR will notify the ACO and request appropriate instructions in writing.

c. *NASA Procurements.* The request for waiver procedures may be utilized by the contractor for submission to the NASA PCO or COR when NHB 5300.4(2B) is invoked without MRB authority. When such actions are taken by the contractor, pertinent QAR comments should be provided.

8-202—PREPARATION OF A REQUEST FOR WAIVER.

A request for acceptance of nonconforming supplies or services is prepared by the contractor or subcontractor on his own form or letterhead, unless specific forms are designated by contract. A subcontractor initiated request for waiver must be thoroughly evaluated by the prime contractor and supported by documented evidence. Only authorized prime contractor personnel are permitted to formally submit the Request for Waiver to the QAR. A request for waiver, when other instructions have not been received from the PO, should include the following information:

a. Name and address of contractor.

b. A request for waiver number. This is a serial number starting with (1) on each contract preceded by contract number, e.g., 56824-1.

c. Complete identification information, such as contract number and type of contract (CPFF, FP); part name and number including revision data, specification number including revision data; lot, model, or serial numbers.

d. Quantity of nonconforming items.

e. Details of each deficiency with respect to technical requirements, including statement of the effect on minor areas of consideration. Recurrency data for each deficiency also will be provided. Marked up drawings should be included, if necessary.

f. Reason for submission of request.

g. Proposed corrective action taken to prevent recurrence, including effective date or serial number of equipment. If prevention is impossible, state why.

h. Reduction in price.

i. Signature and title of authorized contractor representative.

8-203—PROCESSING OF REQUESTS FOR WAIVER

a. Upon receipt of completed Requests for Waiver from a contractor the QAR shall:

(1) Assure the nonconforming supplies have been properly identified and segregated.

(2) Review the Request for Waiver to assure all prescribed information is provided.

(3) Verify the adequacy and accuracy of information and assure that nonconformances are not misidentified as affecting minor considerations when major areas are actually affected. QARs should be alert for a series of minor nonconformances which could have the effect of creating a major nonconformance.

(4) Assure that reported corrective action has been taken to correct and prevent recurrence of conditions causing the nonconformance. Where recurrency data on the request for waiver indicates a high degree of repetitiveness for specific deficiencies, the ACO will be notified.

(5) Assure that sufficient copies of the request for waiver have been provided to satisfy CAO or purchasing office distribution requirements. These requirements vary significantly between contracts, PCOs, and Military Services and their subordinate elements. Accordingly, if not provided by contract or letter instructions from the PO, QARs will request distribution requirements from the cognizant ACO on a contract-by-contract basis.

b. *Processing of Requests for Waiver when Approval not Withheld.* When the contractor has not established materials review procedure for disposing of minor nonconformances, the request for waiver will be referred to the CAO for appropriate action. Referral of the Government approved request for waiver to the ACO for contract modification normally is not required except when the Government representative estimates that the contractor saved $50.00 or more in producing the nonconforming supplies or performing the nonconforming services.

c. *Processing of Requests for Waiver when Approval is Withheld.* In addition to requirements in subparagraph a above, the QAR shall:

(1) Provide reasons for recommending acceptance or rejection of the supplies or services.

(2) If acceptance is recommended, furnish particulars concerning appropriateness of contractor's adjustment (if known).

d. Requests for Waiver received by the QAR will be processed expeditiously and the QAR will maintain a file of such requests. Where PO approval is required, the nonconforming materials covered by an impending request are to be held in abeyance until final disposition is received from the ACO.

e. When approval of the purchasing activity is required and contractor processes a request for acceptance of nonconforming supplies on DD Form 1694, the QAR will acomplish block 27 in accordance with MIL-STD-480/481 and transmit same to the ACO with supporting data.

PART 3

MATERIAL(S) REVIEW

8-300 - PURPOSE. To establish Material Review procedures to be implemented on DoD contracts, when determined to be in the best interest of the Government and no other contractual directions are provided.

8-301 - EXCEPTIONS TO MATERIAL REVIEW PROCEDURES

a. The procedures do not apply to NASA, NAVY NUCLEAR or Level I/SUBSAFE programs, in which case the contract and a detailed letter of delegation will establish the procedures to be followed. For NASA contracts, also refer to NHB 5300.4(2B).

b. Excluded from these procedures is material rendered obsolete due to design changes or material which has been altered or substituted as a result of planned engineering changes, industrial standard drawing changes, or Government specification changes.

8-302 - PROVISIONS FOR USE OF MATERIAL REVIEW BOARD (MRB). On DoD prime contracts, MRB procedures may be established and implemented when authority for acceptance of minor nonconforming supplies is not withheld; the contractor establishes and agrees to comply with his written Material Review procedures and provides adequate engineering capabilities and personnel who are fully knowledgeable of product technical requirements to participate in making MRB decisions.

8-303 - ESTABLISHMENT AND COMPOSITION OF MRB

a. One or more MRBs may be established as demanded by the volume and diversity of work operations.

b. Each MRB will be composed of the following principal members:

(1) A qualified representative of the contractor's quality control department, as chairperson, subject to the concurrence of the Government representative (QAR).

(2) A qualified representative of the contractor's engineering department, subject to the concurrence of the Government representative.

c. Unless specifically required by the contract and letter of delegation, the QAR is not a member of the MRB; however, the QAR may observe or review any procedures, activities, reports, and decisions made during the Preliminary Review or MRB processes. The QAR shall review for adequacy all contractor procedures used to control the Preliminary Review and MRB processes. The QAR may overrule any MRB decision and/or may disestablish the Material Review Board when the contractor fails to take proper corrective action.

d. MRB members may call upon other contractor personnel for advice. Final decision regarding approval of waivers for nonconforming supplies is solely the prerogative of the Government.

8-304 - RESPONSIBILITIES OF MATERIAL REVIEW BOARD. The MRB will:

a. Review nonconforming material produced under applicable contracts, identify the causes of nonconformance and assure followup action and accomplishment of corrective measures by the contractor for the purpose of preventing

recurrence of the nonconformance. This responsibility may be delegated to the Corrective Action Board (CAB) when properly established in accordance with paragraphs 8-308b and 8-308c below.

b. Evaluate nonconformances and determine the appropriate disposition of the nonconforming material and direct appropriate action to effect the board's disposition.

c. Assure conformance to the established documented procedures for material review activity.

d. Assure that adequate records of all material review actions are maintained and used by the MRB and responsible contractor management personnel for the purpose of determining progress in correcting conditions causing discrepant parts, and that these records are made available to the responsible QAR upon request.

e. Determine the advisability of contractor submitting a request for an engineering change where apparent unrealistic requirements are causing the nonconforming material.

8-305 - MATERIAL REVIEW BOARD PROCEDURES

a. When material is found to depart from technical requirements, it will be properly identified and, where practical or required for control purposes, removed from the normal production and inspection channels.

b. Unless otherwise indicated by the MRB, qualified contractor personnel shall perform a preliminary review of the material deficiencies and where disposition is to scrap, return to supplier, complete work omissions, rework to meet the specifications, or repair by Standard Repair Processes approved by the MRB and the QAR, initiate the required action without referral to the MRB. (Where the contract requires prior Government approval to scrap material, the contractor must refer the material to the MRB and the QAR prior to scrapping.)

c. The contractor shall document all nonconformances indicating proper disposition. In addition, when disposition in subparagraph b above is not effected, the nonconforming supplies will be identified to indicate that they were subjected to initial MRB procedures. The reason for the nonconformance and all related actions taken with respect to the supplies will then be recorded on a suitable contractor material review record (approved by the MRB) which will include the following information and will be attached to the materials:

(1) Name and address of contractor.

(2) Contract number and subcontract number, as applicable.

(3) Complete identification data, such as part or drawing number, part name, model or serial numbers, if applicable, and specification number, if applicable.

(4) Type of nonconformance.

(5) Quantity of nonconforming items.

(6) Description of the nonconformance and frequency of occurrence.

(7) Corrective action to prevent recurrence (assignable causes) or rationale for MRB decisions not requiring corrective action.

(8) Recommended disposition (use as is, repair, rework, scrap).

(9) Signatures and dates of contractor's quality control and engineering representatives.

d. If approval is subsequently granted, the material review record is to remain with the materials until product acceptance takes place insofar as practicable. Referral of the MRB record to the ACO for contract modification normally is not required except when the QAR estimates that the contractor saved $50.00 or more in producing the

nonconforming supplies or performing the nonconforming services. DD Form 1998 shall be used in this case.

8-306 - MATERIAL REVIEW BOARD FUNCTIONS

a. The MRB should function as a unit; however, it is not mandatory for the members of the MRB to convene at the same time to review the submitted material. When previously established and approved repair criteria are available, the MRB may use such criteria for subsequent dispositions. MRB actions predicated on valid engineering decisions involving a discrepancy will not be used as a justification for tolerating recurring discrepancies. Where criteria are not available, the contractor's engineering and quality control representatives will conduct research and provide fully documented disposition of the material. The MRB will determine whether:

(1) Material is acceptable for "use as is." Material which is identified as containing Type II departures and completely usable without rework or repair may be accepted as "use as is" with the concurrence of all MRB members. This material, thereafter, shall be submitted to the QAR for concurrence.

(2) A suitable method of repair or rework has been identified which will permit the item to satisfactorily perform as originally identified. The MRB will indicate whether the items, after repair or rework, are to be resubmitted to the MRB or processed through normal inspection channels. Repair by other than Standard Repair Process requires QAR approval. Material that has been satisfactorily repaired, reinspected, and accepted will thereafter be considered as normal material.

(3) Scrapping of material is required. Material to be scrapped will be positively segregated and identified in such a manner as to [illegible] the possibility of its use on any Government contract. Disposal of such material is at the discretion of the contractor, unless the contract terms specify that it be handled otherwise (as in the cost type contracts and reclamation of precious metals).

b. On DoD procurements where the final disposition involves a Type I nonconformance, the MRB has no authority other than to reject. If the contractor desires the PO to consider acceptance for Type I nonconformances, request for such consideration must be made. The Request for Waiver procedures, as set forth in part 2 of this section, should be utilized by the contractor for this purpose.

c. The contractor's engineering representative on the MRB will provide details of any engineering analyses to other board members and will annotate recommendations with disposition of the item on the material review record.

d. Rejection of nonconforming material can be made by any member of the MRB without the concurrence of all members. Any disagreement between contractor MRB members must be resolved prior to submission for Government approval. The QAR shall approve/disapprove every MRB decision that accepts a nonconforming material for "use as is" before that nonconforming material is processed further.

e. Notwithstanding the existence of approved repair procedures or other previously established acceptance criteria, the contractor is responsible for taking appropriate action to investigate causes of nonconforming material and to prevent recurrence. The promptness of the corrective action taken by the contractor, the number of items involved, and the frequency of the recurrence will be considered by the MRB in making decisions regarding acceptance of recurring discrepancies referred to the MRB.

f. If, in the opinion of the QAR, the volume of parts requiring MRB actions becomes excessive, he will request the contractor to take immediate action to correct the conditions leading to the production of the nonconforming material.

8-307 - USE OF SUBCONTRACTOR MATERIAL REVIEW BOARDS

a. On DoD procurements, it is the policy of DoD not to establish MRBs at subcontractor's plants. In exceptional cases, the prime contractor QAR may, at the request of the prime contractor, authorize the establishment of an MRB at the subcontractor plant when such action is considered advantageous and when the following exists:

(1) The subcontractor agrees to comply with MRB procedures approved by the prime contractor.

(2) The subcontractor agrees to comply with the requirements in paragraphs 8-303b and 8-303c above.

(3) The subcontracted supplies require Government PQA actions at source.

b. When the QAR at the subcontractor facility grants a minor waiver and estimates that the subcontractor saved $50.00 or more in producing the nonconforming supplies, the QAR will refer the approved MRB record to the QAR at the prime contractor's facility for referral to the ACO. When support administration is requested and an ACO is assigned, the QAR at the subcontractor's facility will refer the approved MRB record to the assigned ACO.

c. Consistent with DoD policy, PQA actions should not be requested for the sole purpose of providing material review actions at subcontractor level. Where material review procedures are not authorized at the subcontractor level, the subcontractor's request for a minor waiver will be forwarded to the prime contractor for material review at the prime contractor level.

8-308 - CORRECTIVE ACTION

a. The contractor shall develop, document, and maintain a corrective action system that shall effect cost-effective positive action to reduce the costs associated with scrap, rework and repair, and reduce the amount of nonconforming material.

b. For major systems/subsystems, the contractor shall appoint a Corrective Action Board (CAB) with the authority to assure implementation of corrective actions throughout the contractor's organization. The corrective actions shall extend to changes in workmanship, procedures, techniques, processes, tools, or any contractor resources affecting product quality.

c. The CAB shall assure that causes of nonconformances, individually or collectively, are determined and appropriate corrective action is taken by responsible managers for the purpose of preventing recurrence of nonconformances. This function shall be performed by review and analysis of nonconformance data. The CAB shall assure that records of causes, trends, and individual causes acted upon are maintained and that individual records for summaries of actions taken are prepared.

d. The Government representative is not a member of the CAB; however, CAB activities will be subject to reviews by and must be acceptable to the Government Representative. The QAR may disapprove part or all of the Corrective Action system.

SECTION IX

SPECIAL SUBJECTS

PART 1

QUALITY DATA EVALUATION

9–100—PURPOSE. To provide instructions to the QAR regarding collection, evaluation, and use of quality data.

9–101—GENERAL.

a. The requirement for the collection, evaluation, and use of quality data is contained in the ASPR section XIV. It is defined as documented objective evidence in the form of records, reports, and Government/contractor communications that reflect conditions observed and actions taken related to contract quality requirements.

b. The QAR will consider use of the following data in this evaluation:

(1) Data developed by the contractor during manufacture. Contractor Quality Data includes data related to contractor performance on a contract(s) such as:

(a) Records of inspections or tests.

(b) Records of controls applied to production, material treatment, destructive or nondestructive test processes.

(c) Records of repair, rework or scrap.

(d) Records of material review board actions.

(e) Records of requests for waiver or deviation.

(f) Records reflecting quality requirements imposed on subcontractors and suppliers and objective evidence attesting to the quality of supplies or services.

(g) CA records.

(h) Any other documented record, analysis, or report that has a direct or indirect influence on the quality of the product or services.

(2) Data generated by the Government in the implementation of the PQA Program. Government Quality Data is any data developed by the QAR, supervisory, technical or management personnel performing audits or surveys depicting the results of application of the PQA Program. This includes:

(a) Records of inspections and tests performed.

(b) Results of PR and PE.

(c) CA records.

(d) Results of special audits or investigations conducted at the contractor's facility by other Government personnel.

(e) Reports of Preaward Surveys.

(f) Records of distribution of Government procurement QA effort.

(3) Reports by using activities. User Quality Data is any report or record received from the recipient of supplies pertaining to the quality of the material including:

(a) Rejection notices.

(b) Failure reports.

(c) Quality deficiency data.

(d) Equipment improvement recommendations.

(e) Reports of damaged or improper shipment.

(f) Any other record, report, letter, or message that provides comments or data relative to QA responsibilities.

(g) Results of investigations, findings, and actions taken as a result of the receipt of User Quality Data.

c. The primary objectives of quality data evaluation are to:

(1) Provide a basis for decisions related to the allocation of Government PQA resources.

(2) Determine acceptability of the contractor's quality program or inspection system and effectiveness of CA.

(3) Upgrade the methods and practices used to assure quality during the manufacture, delivery, and use of the item.

(4) Provide a foundation for technical actions aimed at maintaining and improving quality characteristics of both current and future products.

(5) Assure that the data are adequate and being effectively utilized by the contractor.

9–102—APPLICATION

a. Some form of QDE must be applied at all facilities. At the discretion of the QAR a documented system may be included in the Government PQA plan when the contractor produces on Government contracts on a continuous basis or the contracts require a quality program or inspection system and the data involved requires in-depth evaluation. In such case the QAR should include in his PQA planning the specific methods to be used. Application at nonresident facilities will normally be on a limited basis, however, the QAR should be aware of the data generated and perform an evaluation. The design of a QDE system, when determined to be necessary, and frequency of evaluation are left to the judgment of the QAR.

b. A QDE system should provide for:

(1) Collection of Quality Data, or verification of its collection by the contractor.

(2) Method and frequency of evaluation.

(3) Recording the results of evaluation and analysis.

(4) Records of specific actions taken.

9–103—GUIDELINES FOR EVALUATION. Because of the inherent variability in product type, item complexity, variety of process and contractor systems or programs under QAR surveillance, the following guidelines are necessarily broad and nonrestrictive. Innovative techniques for detailed analysis are encouraged.

a. Collection of Quality Data. Collection of data by the contractor should be verified by exercising contractual prerogatives of access and review. It is not implied that such data must be duplicated or withdrawn from files in bulk for the required evaluation. Requirements for maintaining records and reports are established in contracts, specifications, manuals, and other specific directives. The QAR must determine those documents which reflect the most significant actions related to quality. The data to be selected for review may include any reports or records identified in paragraph 9-101b. Collection of data does not require maintenance of file copies for the specific purpose of evaluation. However, the QAR may find it advantageous to maintain certain records, if readily available, for continuous review of trends. Data selected for periodic or specific on-site evaluations, location, personnel contacts, and other pertinent factors should be included in the PQA plan.

b. Method and Frequency of Evaluation.

(1) The method to be developed for evaluation of the various data may range from a thorough simultaneous review to satisfy the primary objectives identified in paragraph 9-101b(4) to a detailed review of certain data related to a specific problem area, such as a report of deficiencies found in material. The relationship of various types of data (contractor, Government and user) must be considered in the evaluation. Deficiencies noted during performance of PQA functions, for instance, which were repeatedly overlooked by the contractor, as evidenced by lack of rejection data, indicate a trend of nonconformance in the area evaluated. Customer complaints, traceable to a deficiency in the contractor's operation, may indicate the need to intensify the Government PQA effort in that area to preclude shipment of defective material. Repeated rejection or high scrap rate in particular contractor operation may indicate lack of control or impractical, overly stated requirements. In addition, the QAR should review Government data prepared by subordinates. This will provide assurance that the prescribed records have been completed and maintained as required, and that appropriate actions were taken with respect to observed deficiencies.

(2) The frequency of evaluation must take into consideration the type and volume of data to be reviewed, as well as the impact on product quality which could result from failure to identify adverse

trends. Frequency of contractor evaluation also should be taken into consideration to allow for Government review of his effort in this area. The total effort may be segregated by product lines, geographic area or other division, with an optimum frequency of 1 month.

c. *Recording Results and Analysis.*

(1) The QDE system should provide for a synopsis of the accomplishment and findings of the evaluation. This information should be recorded using any available forms that are suitable for the purpose. Suggested record format, when considered appropriate by the QAR, could include:

(a) Date of evaluation.
(b) Elements or areas evaluated.
(c) Personnel performing the evaluation.
(d) Records evaluated.
(e) Findings or results of the evaluation.
(f) Recommendations made or actions taken.

(2) Analysis of the findings must be conducted to obtain an overall assessment of the quality effort. Isolated problem areas may not appear to present a major impact when considered individually, however recognition of similar problems in several areas could indicate lack of management control. Comparison of current and previous findings will indicate trends, and provide a measure of the effectiveness of the QDE system and need for adjustment, if necessary.

d. Records of Specific Actions Taken. The QAR shall advise the contractor of his findings when quality problems are evident. Any conditions adverse to quality should be discussed during periodic meetings with contractor management. A memorandum for record should be maintained of the discussions and results.

PART 2

AUTHORIZING SHIPMENT OF SUPPLIES

9-200—PURPOSE. To implement ASPR section XIV, paragraph 14-306(c) for COC and ASPR section XIV, paragraph 14-409 for Alternative Procedures—Contractor Release of Shipments.

9-201—GENERAL

a. ASPR appendix I, Material Inspection and Receiving Reports, describes the methods to be utilized by the QAR for authorizing the release of shipments made by both prime contractors and subcontractors. The QAR should have available a copy of appendix I that is applicable to the contract. Normally, a contractor will utilize the latest effective appendix I in the preparation of DD Form 250 Series, MIRR, covering shipments of supplies for all the contracts that are still active.

b. Prime contracts requiring PQA at source or acceptance at source will usually contain a clause (ASPR 7-104.62) that requires the contractor to prepare a DD Form 250, in accordance with ASPR appendix I.

c. Where shipments are being made directly from a subcontractor to the Government, the prime contractor generally prepares a DD Form 250 or requires the subcontractor to prepare a DD 250. The QAR will indicate PQA or acceptance at source based upon the terms of the contract or based upon the instructions issued by the CAO having cognizance of the prime contractor's operation. On shipments between a subcontractor and the prime contractor or between a subcontractor and a next higher tier subcontractor, the QAR will sign or stamp the contractor's shipping document (packing slip) in the manner described by appendix I, where a QAR release of shipment from the subcontractor is required and ASPR appendix I is a part of the contract.

9-202—TYPES OF AUTHORIZATION FOR RELEASE OF SUPPLIES

a. *Government.* This type is used where it is necessary for the QAR to sign or stamp the papers accompanying each shipment from the contractor's or subcontractor's plant. This is the normal method of release of shipments and includes COC procedures.

b. *Unauthorized.* Normally, contracts assigned for administration establish inspection (PQA) as one of the conditions for the release of shipments. In the event that a contractor ships material without inspection or authorization, the QAR will notify, in writing, the CAO and receiving activity(ies).

9-203—CERTIFICATES OF CONFORMANCE

a. An appropriate clause must be included in each contract authorizing the use of a COC. The contract may provide the CAO the option to use the COC as additional assurance that supplies conform to contract requirements or as the sole basis for acceptance. Although not specifically provided for in ASPR section XIV or ASPR appendix I, some purchasing offices contracts provide for the use of a COC at the option of the CAO. The COC, in this latter instance may be used as the sole basis for acceptance.

(1) A DD Form 250 or other appropriate document for authorizing shipment of supplies is required. ASPR appendix I provides instructions for preparation and distribution of DD Forms 250 for contracts authorizing COC.

(2) When a contract specifies inspection and acceptance at destination, there are no CAO PQA actions involved even though a COC may be referenced. The QA element of the CAO will not normally receive copies of these contracts.

(3) The Government retains the right to inspect

the supplies upon receipt by the consignee. Shortages and nonconforming supplies are treated under the post acceptance remedies, if any, contained in the COC clause. In view of this, the use of such terminology as "inspection and acceptance shall be by COC" is improper. The place of inspection is required to be clearly stated on the contract or purchase order.

b. When a contract specifies inspection and acceptance at origin and does not authorize the use of a COC as the sole basis for acceptance, the certificate must be used only as an element incident to acceptance. This certificate provides additional assurance of contractor compliance to contract terms and is similar to objective quality evidence as defined in the glossary.

c. The QA element of the CAO will determine if COC should be used as the sole basis for acceptance in contracts that authorize optional COC. When the CAO determines that the optional COC will be utilized, this decision will be provided the contractor in writing. In making the determination to have the contractor provide a COC, consideration must be given to the nature of supplies being procured and their intended use; the administrative cost associated with the accomplishment of required PQA actions versus the potential risk in the event of defective material; and the knowledge or experience with the contractor. It is important to remember that this procedure has been authorized to aid the CAO in administration of contracts but does not relieve the CAO from responsibility for assuring contractor conformance to contract terms. The PCO determined that the inspection or inspection and acceptance point should be at origin.

9-204—ALTERNATIVE RELEASE PROCEDURES (ARP)—CONTRACTOR RELEASE OF SHIPMENTS

a. On shipments from prime contractors, alternative release procedures authorized by ASPR 14-409 may be utilized. The use of ARP does not relieve the QAR from any of the responsibilities in the performance of PQA actions. It shall not be used as the sole basis for acceptance or in lieu of performing PQA actions. ARP may be authorized on a commodity, contractor, or contract basis but are not authorized unless PQA activity is performed continuously or there is sufficient continuity of production to permit PQA activity to be scheduled. The QAR should recommend to the QA element of the CAO, that the contractor be permitted to release shipments by this procedure. ARP will not be authorized on any contracts involving shipments for NASA, Level 1 SUBSAFE, or Naval Systems, Technical Representative (i.e. nuclear) programs.

b. When the contractor is permitted to release shipments of fuel on petroleum terminal service contracts, the authorization will be in accordance with ASPR 14-503.

PART 3

INSPECTION AND ACCEPTANCE OF TECHNICAL DATA

9–300—PURPOSE. To provide instructions and establish QAR responsibilities and procedures for inspection and acceptance of Technical Data.

9–301—GENERAL

a. Reliable data are essential to competitive procurement, reprocurement and for proper utilization, maintenance, and logistic support of weapon systems, material, and services. Data are common and indispensable elements influencing decisions in every phase of weapon system or equipment program management. This importance of data necessitates the utilization of capable QA personnel and application of the PQA Program to assure that data are delivered in accordance with contractual requirements.

b. The nature and extent of the CAO support and responsibility to data procurement are indicated in provisions of contracts; such as DD Form 1423, or as stipulated in special instructions from the respective purchasing activity. The approval of the technical adequacy and accuracy of data is normally a PO function. The PO may delegate such authority to contract administration elements staffed to perform the necessary evaluations after coordination with that office.

9–302—CONTRACT QUALITY CONTROL PROVISIONS

The contractor's data preparation and inspection activities are not exempt from the requirements of MIL-Q-9858A, MIL-I-45208A or the inspection clauses of Standard Form 32. How elaborate the contractor will establish and maintain an effective system for preparation and quality control of data will be governed by the complexity of data requirements and contractual provisions.

9–303—DEFINING THE DATA TO BE ACQUIRED FROM CONTRACTORS

a. The basic management tools used by the Military Departments and agencies to acquire essential data are the DoD ADL Index of DIDs, TD3, and DD Form 1423, CDRL. The DoD ADL is a compilation of DIDs authorized for use in procurement from which appropriate DIDs are selected, for contractual application, to satisfy Government data requirements. The DIDs defines the content, preparation instructions, format and intended use of each data product. The CDRL is the principal contractual instrument used to identify, as a separate line entry, each authorized data item required from the contractor. The CDRL is intended to provide in one place information on each data relating to inspection approval and acceptance requirements, frequency of submission, submittal dates, and distribution. The blocks numbered 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15 and 16 are of particular significance to QA. These blocks of the form must be carefully examined for such information as:

(1) *Blocks 2, 3 and 4. Title and Authority.* Proper titles, subtitles and identification numbers of the data items. If the data items are selected from the authorized data list, blocks 2 and 3 titles/subtitles and block 4 item numbers will be identical to the information contained on the appropriate DD Forms 1664, DID of TD-3, DoDADL. The same will apply for new and revised DD Forms 1664 attached to the contract.

(2) *Block 5. Contract Reference.* Correctness of the specific paragraph number of the contract, Procurement Request, System Specification or applicable document in connection with block 4 data item.

(3) *Block 6. Technical Office.* Responsible Office for assuring the adequacy/accuracy of the data.

If the space is left blank, check blocks 7 and 16 and other applicable parts of the contract, particularly the statement of work.

(4) *Block 7. DD 250 Requirement.* Office designated to be the point of inspection/acceptance and shipment of the data with a DD Form 250. This is indicated by the purchasing agency by entering the applicable code for inspection and acceptance as shown below. If the data item is to be inspected at destination, the activity will be the first addressee listed in block 14.

Code	Inspection (PQA)	Acceptance
SS	*Source (DD Form 250)	*Source (DD Form 250)
DD	Destination (DD Form 250)	Destination (DD Form 250)
SD	*Source (DD Form 250)	Destination (DD Form 250)
DS	Destination (DD Form 250)	*Source (DD Form 250)
LT	Letter of Transmittal Only	As specified in Block 16, DD form 1423, or contract clauses.
XX	Inspection/Acceptance and DD Form 250 requirements specified elsewhere in contract.	
NO	No inspection or acceptance required.	

*Source indicates contractor's facility.

(5) *Block 8. Approval Codes.* Entry of the following codes:

Codes	When Used
"A"	The data item is critical and requires advanced written approval prior to publication of the final document. Required approval will be explained in block 16.
"D"	A distribution statement is either cited in block 16, specified in the DID, or obtained from the program office.
"AD"	Both approval and distribution statements are required.
"N"	Not applicable.
"AN"	Approval required.
Blank	Advanced approval not required.

NOTE: Code "A" used DoD wide. All other codes used by Air Force and Navy only.

(6) *Block 9.* This block used only when an IAC is involved. If data are inputs to an IAC contractor, or if data are the integrated result of specific inputs from associated contractor, an "X" will appear in this block.

(7) *Blocks 10 through 13.* Frequency, date of first submission and subsequent submissions of each data item.

(8) *Block 14. Distribution and Addresses.* This block will list the addressees and the total number of copies (regular or reproducible) each is to receive. For example: WRALC/WRNSD 1/1 means 1 regular copy and 1 reproducible master are required to be provided to the addressee. Addressees are designated by Command/office, symbols, contractor initials, or DoD Handbook H-4 numbers. Block 16 or the applicable DD Form 1664 will explain the kinds of regular and reproductible masters (i.e., reproducible pages, photolithographic negatives, multility mat, and vellum) that are required to be furnished.

(9) *Block 15. Total.* Total number of regular copies and reproducible masters required to be delivered. This may be obtained by adding all of the

insertions in block 14.

(10) *Block 16. Remarks.* Additional information and instructions regarding any of the other blocks on the CDRL form. This may include data item modifications, (i.e. tailoring data item to specific procurement) special packaging and delivery information, amplification of "deferred" status.

b. In addition to reviewing the CDRL and DID's, the QAR will examine the work statements of the contract. The statement of work addresses itself to the equipment and services (work effort) of the contractor, whereas the CDRL (and the applicable ASPR clauses of the contract) describe specifically what kinds of data the purchasing activity desires prepared and delivered. The statement of work may include such information as requirements for in-process and prepublication reviews, validation/verification and revision cycles. An understanding of the requirements stipulated in the work statement and CDRL of the contract will enable the QAR to properly plan his activities associated with ensuring quality data furnished by the contractor.

c. The manner in which Military Departments manage their technical data programs and set forth contractual requirements for acquisition of essential data are described in the following publications:

(1) AIR FORCE: AFSCR 310-1, Management of Contractor Data.

(2) NAVY: NAVMATINST 4000.15A, Department of the Navy Management Program.

(3) ARMY: AR 700-51, Improved Management and Determination of Requirement for Procurement of Technical Data and Information.

9-304—CORRECTING DEFICIENCIES IN DATA REQUIREMENTS AND SPECIFICATIONS

a. Purchasing activities must utilize the CDRL Form to specify their data requirements. The CDRL must include all essential information that will enable the contractor to proceed, without delay, to fulfill his contractual obligations. When the CDRL is not included in a contract requiring data or the information on the CDRL is incomplete or inaccurate, the specific shortcoming will be documented on DD Form 1716. The use of DD Form 1426, for reporting specifications deficiencies or inadequacies still applies; however, it will be used in conjunction with DD Form 1716.

b. The QAR will utilize the most expeditious procedures to resolve CDRL problems with the PO when such problems if remained unresolved, could cause data preparation disruption and schedule slippage.

9-305—TECHNICAL SUPPORT TO QAR

a. The Technical Data Specialist will support the QAR in matters relating to the review of data for conformance with contractual requirements, and in development of pertinent data checklists. For example, the assistance may include, but not limited to, the arrangement and presentation of the material, style and level of writing, clarity, quality of reproducibles, photolithographic negatives, and microfilms.

b. During scheduled, formal reviews, the QA engineering element will provide engineering assistance as needed by the QAR to facilitate the purchasing activity's verification of the accuracy of data with the "as built" configuration of systems and/or equipment.

c. In plants covered by QA personnel on an nonresident basis, the supervisor will consider local conditions to determine the practicability of having Government inspection and acceptance of data performed by the nonresident QAR, with the technical assistance of the Technical Data Specialist, or by the Data Specialist alone.

9-306—BASIC RESPONSIBILITIES FOR ALL DATA

a. When applicable, review contractor's written quality procedures for controlling the quality of data to assure compliance with contractual requirements. Procedures considered essential for providing quality data should include instructions on:

(1) Assuring that the data are suitable for intended uses as specified by contract or specifications thereto.

(2) Assuring that the data are accurate and current.

(3) Assuring early and prompt detection of actual or potential deficiencies, trends or conditions which could result in unsatisfactory quality, and for timely and effective corrective action.

(4) Assuring prompt corrective action of data deficiencies reported by the Government, and for analyses of such deficiencies to determine and eliminate the cause.

(5) Assuring that data marked with the limited rights legends conform with the terms of the contract.

(6) Controlling data preparation at subcontractors (if applicable).

b. Assure contractor's quality program or inspection system provides effective procedures for inspecting and validating, as appropriate, the data for technical adequacy and accuracy, pertinency, and conformance to preparation requirements.

c. Develop appropriate checklists for evaluation of contractor's written procedures. The checklists will include as appropriate, characteristics for procedural element relating to drawings, documentation, and change control.

d. Assure that data which requires prior technical activity approval are not accepted until such approval is granted.

e. Perform PQA and acceptance, or PQA only, as required.

9–307—SPECIFIC RESPONSIBILITIES FOR TECHNICAL MANUALS. In addition to the basic responsibilities for "all data", when technical manuals are involved the QAR shall:

a. Assure that contractual requirements for validation are complied with by witnessing and evaluating the effectiveness of the contractor's data validation exercises. Validation is normally accomplished by the contractor during regularly scheduled production, tests, inspection, and demonstrations, in close coordination with the technical agency and/or QAR. When the QAR determines that Government QA personnel are not required during a particular validation exercise, the contractor's evidence (records of accomplishment) of such validation will be reviewed at the time the material is presented for acceptance.

b. Participate in prepublication reviews and verification processes, where requested, and assure that review team comments have been incorporated in data prior to acceptance.

c. When technical manuals require progressive review during stages of preparation, product verification inspection will be utilized as follows:

(1) IN-PROCESS INSPECTION. This type of inspection is accomplished on a technical manual at one or more stages of its preparation, as determined essential by the QAR. The stages at which in-process inspection is accomplished are generally:

(a) *Final Draft.* The final draft is the complete typewritten text of a manual, prepared double-spaced. Accompanying art work may be submitted either as copy prints or in final reproducible mounted form. The review will utilize the characteristics of the detail specification to assure presence and sequence of required content matter and compliance with other applicable provisions of the general specifications. Art work should be complete and conform to the applicable specification requirements.

(b) *Paste-up Dummy.* Review of the paste-up dummy should primarily consider satisfactory layout, adherence to mechanical and format specification requirements, consistency of text with final draft, and proper placement of illustrations. (Unless exceptional local conditions exist, this inspection step may be omitted in favor of inspection at reproducible copy stage.)

(c) *Reproducible Copy.* Inspection of reproducible copy will assure compliance with requirements of detail and general specifications. All mechanical and format requirements of both reproducible copy and art work will be reviewed with special emphasis placed on the format and reproducible quality of the finished product. Whenever possible, the final draft should be used as a guide in this inspection. (This will be considered in-process inspection whenever contract requires delivery of photolithographic negatives.)

(2) END PRODUCT INSPECTION. This type of inspection is accomplished on the data in its final form (reproducible, copy or photolithographic negatives as required by contract). If no review was performed on the technical manual during its prelim-

inary stages of preparation, the end-item will be inspected for conformance to detail and general specification requirements. If review was performed on the technical manual during its preliminary stages of preparation, the amount and type of end product inspection will be determined by the QAR; normally, this involves inspection of the end product for conformance with the format and reproducibility requirements, as well as assuring that all essential corrections have been accomplished.

9–308—SPECIFIC RESPONSIBILITIES FOR ENGINEERING DATA. PQA responsibility for engineering data includes assurance that engineering drawings, data lists, furnished by contractors meet the requirements of the contract and the applicable specifications with regard to completeness, format, reproducibility, legibility, and presence of required information. The responsibility for presence of required information requires verified assurance that all applicable technical, engineering, and informative data required by the governing specifications appear on engineering drawings as specified, but does not include the responsibility for the accuracy of engineering information related to design, dimensions, tolerances, fabrication methods, or processes. For example, it is not intended that the QAR verify accuracy of dimensions and tolerances by performing measurements, nor determine that the methods or processes specified for the given item are proper. The QAR will, however, assure that the drawings to be delivered under the contract(s) have been compared with the production and manufacturing drawings in the contractor's drawing and change control system to verify compatibility and conformity of technical content and configuration. In addition to this responsibility and the basic responsibilities for all data, when engineering data are involved the QAR shall:

a. Assure that the contractor's quality program/inspection system results in furnishing all engineering drawings, indexes, associated lists, (tabulating cards, aperture cards, microfilm) in accordance with contractual requirements.

b. Determine the overall quality of the drawings for reproduction or microfilming and verify contractor's compliance with requirements governing preparation of drawings.

c. Prior to acceptance, assure that the data containing instructions as to use are compatible with contractual provisions governing the Government's rights-in-data, that is "limited rights" or "unlimited rights". In all cases where data contains restrictive legends and the contract provides for "unlimited rights" data, the QAR will refer the situation to the ACO or PCO, as applicable, to determine the appropriateness of such legends prior to acceptance. The following restrictive legend is required to appear on data furnished with "limited rights" under contracts setting forth the basic data clause as shown in ASPR 9-203(b)(2):

LIMTED RIGHTS LEGEND

Contract No. . . . . .
Contractor: . . . . . .
Explanation of Limited Rights Data Indication Used . . . . . .
. . . . . .

Those portions of this technical data indicated as limited rights data shall not, without the written permission of the above contractor, be either (a) used, released or disclosed in whole or in part outside the Government, (b) used in whole or in part by the Government for manufacture or (c) used by a party other than the Government, except for: (i) emergency repair or overhaul work only, by or for the Goverment, where the item or process concerned is not otherwise reasonably available to enable timely performance of the work, provided that the release or disclosure hereof outside the Government shall be made subject to a prohibition against further use, release, or disclosure; or (ii) release to a foreign government, as the interest of the United States may require, only for information or evaluation within such government or for emergency repair or overhaul work by or for such government under the conditions of (i) above. This legend, together with the indications of the portions of this data which are subject to such limitations, shall be included on any reproduction hereof which includes any part of the portions subject to such limitations.

ASPR section IX, part 2, sets forth the DoD policy, implementing instructions, and contract clauses with respect to acquisition of rights in technical data and other data and copyrights. ASPR 9-203(b)(2) basic data clause, "RIGHTS IN TECHNICAL DATA (1972 Apr)", lists the general kinds of data in which the Government shall have "limited" and "unlimited" rights. This clause contains no provisions on the quantities and specific items of data which will be furnished by the contractor. The quantities and specific items of data to be procured are listed in DD Form 1423.

d. Assure that the formats and coding of tabulating and aperture cards for engineering data are in conformance with contractual requirements.

e. Assure that microfilms of engineering documents are produced and processed in accordance with contractual requirements. This includes assurance that the test instruments and comparing scales are of the proper accuracy.

9-309—OTHER DATA ITEMS. When other data items are involved the QAR shall:

a. Assure conformance of data with regard to format, reproducibility, legibility, and content specified in the applicable specifications and standards.

b. For data furnished in accordance with FED-STD-5 requirements, effect acceptance, as applicable, when contractor provides assigned National Stock Numbers, signifying that the item identifications have been approved by the responsible Government cataloging activity.

9-310—REVIEW AND APPROVAL OF DATA BY THE TECHNICAL AGENCY

a. For an item of data requiring review/approval by the technical agency and return to the QAR for inspection/acceptance, such item should be forwarded to the technical agency by a letter of transmittal. Upon return of the item from the technical agency, a DD Form 250 should be accomplished after the QAR has determined that the item conforms with contract requirements and includes, when applicable, all requested Government changes and corrections.

b. The letter of transmittal should include essential information such as:

(1) The data item number and its applicable procurement instrument identification number.

(2) Action required of the technical agency.

(3) The address to return the item for final processing in accordance with contractual requirements.

(4) QAR preliminary review comments, if any.

PART 4

PACKAGING AND MARKING OF MATERIEL FOR SHIPMENT

9-400-PURPOSE. To provide guidance to the Quality Assurance Representative (QAR) pertinent to the responsibilities for preservation, packaging, unitization and marking for shipment of materiel (afterward referred to collectively as "packaging") procured for the Government.

9-401-GENERAL

a. The joint implementation of Federal Acquisition Regulation (FAR), subparts 10.004 and 47.305; Department of Defense Instruction (DODI) 4100.14, Packaging of Materiel; and AR 700-15/NAVSUPINST 4030.28B/AFR 71-6/MCO 4030.33B/DLAR 4145.7, Packaging of Materiel, establishes policies and describes responsibilities to attain economy, efficiency, and uniformity in packaging. These documents also require materiel protection from deterioration, damage, theft, and misshipment while in transit and storage.

b. The contract quality assurance (CQA) elements applicable to a particular procurement are founded on the quality requirements specified by the contract such as MIL-Q-9858A, MIL-I-45208A, QA requirements referenced in FAR Table 46-1, or other similar quality requirements.

c. Packaging standards and specifications invoked by contract specify the extent and type of required packaging inspections and examinations and tests to be performed by the contractor.

d. Under certain conditions, the contractor may be required to design packaging and develop coded data requirements for approval by the procuring activity.

e. Full compliance with packaging requirements of contracts is equally as essential as quality control of the commodity in assuring that items of supply are protected, unitized/palletized, marked and delivered to the Military Services and DLA in a ready-for-use condition. The importance of packaging in support of military programs demands continuous effective compliance with contractual requirements.

f. Contractual guidance for military packaging and marking is diverse and instructions can vary depending on the Military Service, mode of transportation, destination, and type of materiel. Each contract must be reviewed individually in order to determine the specific packaging and associated inspection/test requirements.

g. Improper packaging which may cause materiel loss, damage, or delay, and excessive packaging resulting in additional cost to the Government, will be reported by the receiving activity on Standard Form (SF) 364, Report of Discrepancy (ROD). Prompt action to correct the reported improper, inadequate, or excessive packaging will prevent the problem from recurring and help achieve economy, efficiency, and uniformity in packaging.

9-402-QA RESPONSIBILITIES FOR PACKAGING

a. In planning CQA actions necessary to assure that packaging requirements will be met, a thorough indepth contract review must be accomplished. This can range from a simple notation on the QAR's contract file copy of the contract to annotating the packaging requirements in the remarks block of the DD Form 1904, Contract Review and Planning Document. These should then become part of the overall CQA plan and will identify the contract quality/inspection system requirements and the packaging requirements for that particular procurement.

b. When the contractor controls his packaging operation by inspection or testing, verification shall be accomplished by

Product Verification Inspection (PVI). Product Oriented Procedures Evaluation (POPE) will be used to verify contractor packaging operations when contractor work/inspection instructions for packaging are required by contract.

c. The QAR will perform Procedures Review (PR) and Procedures Evaluation (PE) as referenced in section IV, parts 2 and 3, in order to assure the adequacy of contractor controls pertaining to packaging. Alpha designators, assigned for use in the preparation of PE checklists, are listed under section IV, part 2, paragraph 4-206.

(1) Designation "I," Handling, Storage and Delivery, is used for evaluating the contractor's packaging effort with MIL-Q-9858A, Quality Program Requirements System.

(2) Designation "C," Completed Item Inspection and Test, is used with MIL-I-45208A, Inspection System Requirements.

(3) Procedures Evaluation (PE) will be used to maintain assurance of contractor compliance where the contractor is required to develop written procedures for control of the packaging operations under the "higher level" quality requirements invoked by contract. Where the contractor is required to control packaging through inspection and testing, the QAR will maintain assurance of contractor compliance by performing PVI.

d. Regardless of the quality provision specified in the contract, the QAR will assure contract control in the following areas:

(1) Procedures, facilities, and qualified personnel for cleaning, drying, preservation, packing, unitization, and marking of materiel for shipment and storage.

(2) Testing procedures and facilities for cleanliness, PH (acidity factor), heat seal, and leakage when MIL-P-116 is applicable.

(3) Cyclic exposure and rough handling tests when specified by the procuring activity or required due to packaging design validation in accordance with MIL-STD-2073-1.

(4) Proper installation and use of an electrostatic discharge protective work station for packaging and handling of all electrostatic discharge sensitive items.

(5) Inspection criteria for preservation, packaging, packing, and marking.

(6) Instructions for marking interior packs, shipping containers, and other shipping units in accordance with military and Federal standard publications and regulations. (While MIL-STD-129 is the basic marking document, DoD 4500.32-R, MILSTAMP, will apply when shipment is to enter the Defense Transportation System (DTS).)

(7) Marking of hazardous materiel shipments as specified in the following documents:

(a) Code of Federal Regulations (CFR), title 49, part 172.300, subpart B, Marking, and part 172.400, subpart E, Labeling.

(b) Preparation of Hazardous Materials for Military Air Shipment, AFR 71-4/ TM38-250/NAVSUP PUB 505/MCO P4030.19D/ DLAM 4145.3, chapter 13, Marking, Labeling, Certifying, and Placarding.

(c) USPS Publication 52, Acceptance of Hazardous, Restricted or Perishable Matter, paragraph 220, Marking.

(d) MIL-STD-129, Marking for Shipment and Storage, appendix E. NOTE: A shipper certificate, DD Form 1387-2, Special Handling Data/Certification, is required on all military contract carrier or air shipments of hazardous materiel. The shipper (contractor), not the Government Quality Assurance Representative, is responsible for signing this form. The DD 1387-2 must be signed in longhand above the typed signature.

(8) Carloading and truckloading procedures for loading, blocking, and bracing. The contractor is responsible for assuring that carload and truckload shipments are properly loaded, blocked, and braced in accordance with the terms of the contract and DoD regulations, as applicable.

(9) Preproduction testing of sample packages, including assurance that the planned production package will consist of the same materiels and will be produced by the same methods as were used in the preproduction sample package. NOTE: First article inspection requirements identified by contract include packaging unless the packaging is a separate line item and first article requirements are not applicable to that line item.

(10) Work inspection instructions, sampling plans, and detailed records of inspection.

(11) Preparation and maintenance of necessary instructions, work details, or drawings for performance of specified packaging methods.

(12) Procedures for filling cans or drums including determination of interior cleanliness of containers.

(13) Availability of objective evidence that packaging materiels (such as cleaning agents, preservatives, wraps, barriers, cushioning, desiccant, adhesives, tapes, interior containers, shipping boxes, and crates) conform to contractual requirements. This includes reusable containers, boxes, cans, or drums and the determination of their interior cleanliness. Unless otherwise specified in the contract or order, the evidence may be in the form of periodic laboratory test results, analytical findings, or statements of quality.

e. When incomplete or inadequate contractual packaging requirements exist, a DD Form 1716, Contract Data Package Recommendation/Deficiency Report, must be forwarded to the Contracting Officer (CO) via the Administrative Contracting Officer (ACO). The DD Form 1716 should be coordinated with the Contract Management's Packaging Specialist to assure appropriate technical support.

f. Upon receipt of an SF 364, an immediate investigation is required and action must be taken to prevent a recurrence. Statements on corrective action will be furnished when requested by the SF 364. Coordination with the functional packaging element must be made when SF 364 addresses package failure or inadequacy. Statements of corrective action are automatically required on all reports of discrepancies involving ammunition, explosives, or other hazardous materials.

9-403-SUBCONTRACTOR PACKAGING

a. When packaging is subcontracted, i.e., to a packaging house, the prime contractor will be notified that final inspection and acceptance will be at the location cited in the contract. If the prime contractor wants final inspection and acceptance at the packaging house, he must initiate the request to change the location cited in the contract.

b. Final inspection and acceptance of packaging must be accomplished at the prime contractor's facility when contract specifies.

c. Products that are shipped from a packaging house will specify final inspection and acceptance of packaging at the packaging house. Under this condition, the prime QAR will indicate CQA fulfillment of the product by annotating on commercial shipping documents the required statement of Defense Federal Acquisition Regulation (DFAR), appendix I, paragraph I-201.

d. Products that are shipped from a packaging house that do not show final inspection and acceptance of packaging at the packaging house will require a DD Form 1716 requesting that the point of final inspection and acceptance of packaging be

changed to the packaging house. In all cases, the appropriate statement from DFAR, appendix I, paragraph I-201, should appear on the commercial shipping document from the prime contractor to the packager to alert the QAR that CQA has been performed at the prime contractor facility.

9-404-SHIPMENT OF MATERIEL

a. The DD Form 250, Material Inspection and Receiving Report (MIRR), must be attached to the shipment in accordance with DFAR, appendix I, table I. The DD Form 250 must be attached accordingly on the following types of shipment:

(1) Carload or truckload. Affix to the shipment where it will be readily visible upon receipt.

(2) Less-than-carload. Affix to container number one or to container bearing the lowest number.

(3) Mail, including parcel post. Attach to outside or include in the package. Include a copy of each additional package of multipackage shipments.

(4) Pipeline or tank car. Forward with consignee copy.

b. When required, the QAR will assist the cognizant transportation office (CTO) to expedite the movement of materiel from the contractor plants to destinations. The QAR will assure that contractor has the necessary transportation documents, as specified by CTO, and that the documents have been properly completed in accordance with instructions received. Export shipments to a Military Service air or water terminal for transshipment are of particular importance. Regardless of free on board (f.o.b.) terms, such shipments must be cleared through the CTO prior to release to carrier for purpose of clearance into the Defense Transportation System (DTS), i.e., export release and/or MILSTAMP documentation. Additionally, export shipments must have a transportation control number (TCN) assigned by the CTO and should not be approved for release until markings are complete and in accordance with contractual requirements or CTO instruction.

c. Classified materiel being prepared for shipment must be properly packaged and marked in accordance with contractual security requirements which are controlled and specified by DoD 5220.22-M, Industrial Security Manual for Safeguarding Classified Information.

PART 5

PROCESSES

9-500—PURPOSE. To provide information and procedural guidance to the QAR relative to the evaluation of contractors' processes.

9-501—GENERAL

a. The requirement for processes may be established by direct reference to a Government specification within a contract, or it may be required as a result of a reference to a Government or contractor developed specification on drawings or other technical documentation that are traceable to a contract requirement.

b. Where a contract references a Government specification for a process and the contractor develops his own specification for internal use to cover the requirement, the QAR shall review the contractor's specification to assure that it meets all the requirements of the Government specification.

c. At the time of contract review, the QAR should determine the processes that may be involved. For subsequent verification action, the QAR should carefully review the cited specifications covering processes to determine the requirements for certification of equipment or qualification of personnel. Depending upon the individual specifications, certifications, and qualifications are sometimes required to be accomplished by a Government technical activity supporting the PO.

d. There are other occasions where a process specification has a requirement for certification or qualification of equipment or personnel, but the specification is silent with respect to who accomplishes these certification or qualification actions. In these situations, the contractor may accomplish his own certifications and qualifications or he may employ the services of a commercial laboratory for this purpose. An exception to this procedure are the personnel certifications required by the *Welding Standard* (NAVSHIPS 250-1500-1) where the contractor must do his own certification of inspector level personnel and the technical activity supporting the PCO will certify the Test Examiner level personnel. Where the certification and qualification actions were accomplished by a commercial laboratory, the report issued by the Laboratory should describe the manner in which the certifications and qualifications were accomplished. A review of this report by the QAR is generally sufficient to determine that the certification/qualification was accomplished in accordance with the specifications. When the QAR has reason to question the laboratory's ability to conduct the reported tests to the requirements of the specification or the adequecy or validity of the test report, the QAR should take action through the contractor to resolve the questionable areas.

e. Where a contractor performs his own certification/qualification actions as required by the process specification, the QAR should review the procedures followed by the contractor for the certifications and qualifications to assure that they conform to the requirements of the contract.

f. For certain nondestructive test methods, particularly involving certain Navy contracts, personnel within the QA component of the CAO have been authorized and certified as Test Examiners by the technical activity supporting the PO. These Test Examiners are authorized to examine and certify Government PQA personnel involved in these nondestructive test methods.

g. Recognizing the many and varied processes involved, the QAR should make maximum utilization of the appropriate technical specialists of the CAO for assistance in determining that the contractor is complying with the requirements of the process specifications. These specialists should be consulted in the review of the contractor's procedures, preparation of procedures evaluation check lists, and for the evaluation of the contractor's compliance to his

written procedures.

h. Where a contractor utilizes the services of a different contractor for performing some of the processes that are required in the contract, the contractor is responsible to assure that the vendor or subcontractor performing the services meets the certification/qualification requirements that may be applicable to the process specifications. It is essential that applicable contract specification requirements be included in the purchase orders to subcontractors or vendors.

i. Record of certifications and qualifications required to be obtained by the contractor or subcontractor will be made available to the QAR for review as required.

9–502—CONTRACTOR'S CONTROL OF PROCESSES

a. The contractor's control of processes that are accomplished by the contractor shall be based on the requirements of the specification covering the process. These specifications frequently require the contractor to prepare written quality procedures covering the process. These procedures, when approved (where PCO approval is required), or acceptable to the QAR, form the basis for the contractor's control.

b. Where a subcontractor is engaged in the performance of a process, the contractor can determine compliance with the specification requirements of many processes such as heat treatment, plating and chemical coatings, bonding and some nondestructive processes by obtaining statements of quality containing OQE relative to acceptance, qualification/certification, periodic tests performed, and performing sufficient tests in receiving inspection to verify the validity and accuracy of reports furnished. Example: Plating and chemical conversion coatings. Contractors should obtain OQE of lot acceptance and periodic test results, and perform sufficient inspection and tests such as visual inspection, destructive or nondestructive thickness tests, adhesion tests and other special tests on coupons or sample parts, as listed in their quality/inspection procedures, to verify the accuracy of furnished by plating and coating subcontractors.

9–503—PROCEDURES REVIEW. PR required will be annotated on DD Form 1709, as follows:

a. In selecting the characteristics which control the processes, each process will be separated into its individual types and appropriate characteristics will be identified for inclusion on DD Form 1709. Pertinent characteristics which distinguish a particular process type from other types will also be identified.

b. Examples of separation into specific process types under alphadesignator P-Process Controls are:

P-1 Radiography
(a) X-ray
(b) Gamma-ray
P-2 Magnetic Particle
(a) Dry
(b) Wet
1 Fluorescent
2 Nonfluorescent
P-3 Welding
(a) Resistance
1 Spot
2 Seam
(b) Electron Beam
(c) Fusion
1 Gas
2 Electric Arc
a Submerged
b TIG (or GTA)
c MIG (or GMA)

c. Common characteristics in a given process, as above, may be listed once on the DD Form 1709. The distinguishing characteristics between different types will then be added to this list. The element checklist will then be identified as P-1 Radiography with subelements (a) X-ray and (b) Gamma-ray, as shown in paragraph 9-503.

d. Where a characteristic is common to areas outside of "processes" (e.g., "calibration" or "certification") and the QAR chooses to separate this characteristic from the "processes" checklist, the separated characteristic will be included in the common checklist.

e. While there is no established number of characteristics which are essential to control a given process, there are, depending upon the specification, many characteristics to consider. For example, in the heat treat process, commonly applicable characteristics which should be considered for inclusion in the procedures review check list are:

(1) Operating procedures developed and available for use.

(2) Operating procedures conform to specifications requirements.

(3) Operating procedures are being followed by operators.

(4) Furnace temperature checks are made periodically.

(5) Hardness checks are made of each lot of heat treated material (accept/reject criteria are provided).

(6) Destructing testing performed when required to determine properties and internal structure.

(7) Automatic controls are calibrated periodically.

(8) Automatic temperature recording devices calibrated periodically.

(9) Quench solutions are checked daily for adverse reaction to materials and retention of composition.

(10) Quench solution temperature checked daily.

(11) Check loading of furnace to assure good heat circulation.

(12) Specific soaking time and temperature are available.

(13) Instructions with work provide proper soak temperature and quench for each job.

(14) Nonconforming material removed to a material review area for disposition.

(15) Certifications are provided for work performed.

f. It is essential during procedures evaluation that the QAR witness or perform product evaluations to assure effectiveness of the procedural characteristics and compliance thereto. Procedures evaluation will not be accomplished solely by a check of the contractor's records.

9-504—QUALIFICATION

a. Where personnel are qualified to the requirements of a specification or standard by a qualifying examiner, DD Form 1902, will be issued to provide evidence of this qualification (e.g., a CAO Test Examiner qualifying a Test Inspector in nondestructive testing to the requirements of NAVSHIPS 250-1500-1, Welding Standard).

b. Control of these forms will be maintained by each CAO. Car numbers (numerical sequence) will be prefixed by the CAO abbreviation (e.g., DCRL 017—DCASR, Los Angeles Card Number 17).

9-505—TRAINING. The rapid development and improvements in processes, techniques, and materials requires a vigorous approach to training. Training requirements will be continuously revised to reflect changes in technology/state-of-the-art, as well as changes in personnel, thereby enabling rapid response by QA personnel to the requirements placed upon them.

9-506—INSTRUCTIONS FOR COMPLETING DD FORM 1902 CERTIFICATE OF QUALIFICATION

a. Preparation of DD Form 1902.

(1) *Line 1.* Enter name of person being certified and his title.

(2) *Line 2.* Enter brief title of process, the individual is certified to inspect, as: MP (Magnetic Particle), PT (Penetrant), RT (Radiographic, UT (Ultrasonic), and Vis (Visual) Test Inspector. The card may be used for more than one process. Use the indicated abbreviation where space is not adequate for several processes.

(3) *Line 3.* Enter NAVSHIPS 250-1500-1 for Naval Nuclear Propulsion Program or other specifications or standards, when appropriate.

(4) *Line 4.* Enter expiration date of certificate.

(5) *Line 5.* Enter name of NDT Test Examiner and the date certificate is issued.

(6) *Line 6.* Enter organization of NDT Examiner. Enter a CAO control number. Use the CAO symbol as a prefix to a 3-digit serial number.

b. Processes as used in this section refer to

specialized methods involved in the production or inspection of products. Some of these processes are heat treatment, welding, soldering, chemical milling, chemical coating, nondestructive test methods; i.e., radiographic, ultra-sonic, penetrant, magnetic particle and eddy current inspections, and destructive testing such as tensile, bend, and chemical. The specifications covering these processes usually require certification of equipment and/or qualification of personnel to meet specific standards to provide for the required control of the process. These methods are sometimes referred to as "special processes."

c. Specialist as used in this section includes all specialists, engineers and scientists who have technical cognizance over processes.

PART 6

QUALIFIED PRODUCTS LIST

9–600—PURPOSE. To provide instructions regarding support to be given to QPL inspections.

9–601—GENERAL

a. Where the Government believes it technically or economically desirable, industrial suppliers are invited to submit samples of certain items for qualification even though the supplier may not have an active Government contract. The DoDISS indicates the specifications which designate the tests necessary for qualification of the item in order to be listed on the QPL.

b. The fact that a product has been placed on a QPL signifies only that at the time of qualification, the manufacturer made a product which met all specification requirements. Inclusion on the QPL does not relieve the manufacturer or distributor of contractural obligations to deliver items meeting all specification requirements and having available for contractor and QAR review, OQE from actual tests. Each contractor delivering assemblies which include QPL items, is responsible as contractually required, for the performance and reliability of the assemblies including QPL items in his products.

c. Detailed procedures for placing products on or removing them from QPLs are given in DoD 4120.3-M, chapter IV. Publication SD-6, contains pertinent information from DoD 4120.3-M, chapter IV. These documents should be available to QA elements engaged in qualification testing.

d. Qualification tests performed for QPL listing are separate and distinct from NASA Qualification tests and should not be substituted for each other. Contractors using QPL items in end items which are to be delivered to NASA, or in support of NASA contracts, have the same responsibility for meeting contractual requirements as they do on DoD contracts.

9–602—QUALIFIED PRODUCTS LIST INSPECTION

a. Qualification tests are examinations and tests to prove a material, part or process meets the specification requirement and is suitable for listing in a QPL. Qualification tests are performed prior to Government contract award and may be accomplished in a supplier's plant, SPA approved commercial laboratory or Government operated laboratory. The SPA authorizes the qualification test location.

b. Listings and c .ti ica .s should be updated by contractors as they retire or replace obsolete equipment, procure new test equipment to use in QPL tests, relocate plants or equipment, or change in manufacturing processes or suppliers.

c. When QPL testing in a contractor's plant or commercial laboratory is authorized, QA personnel shall accomplish the following:

(1) Assure that administration by the CAO of the QPL test program has been requested by the SPA. If the contractor has been authorized to conduct the program and administration has not been delegated, the authorizing agency should be immediately advised of the situation.

(2) Assure that inspection and test equipment to be used for QPL inspection is of the proper type, range, required accuracy, and properly calibrated.

(3) Select qualification sample units from a representative production lot. If this cannot be done, the SPA should be contacted expeditiously and advised of the situation. Further action will be as directed by the SPA. Annotate the test report for the action directed by the SPA.

(4) Obtain a schedule of tests from the contractor and witness the start and conclusion of all QPL inspection programs and all other tests required by the SPA. Tests will be witnessed throughout, as necessary, to certify that QPL tests were per-

formed as authorized and to support the comments and recommendations. All measurements witnessed will be identified.

9–603—QPL INSPECTION REPORTS. Manufacturers are required to prepare detailed reports of QPL inspections for SPA evaluation prior to listing products on a QPL. QA personnel shall:

a. Forward test reports from the manufacturer to the SPA or its designated agent. The endorsement will include appropriate technical comments and a recommendation to accept the product for QPL listing or reason for not listing the product on the QPL. QA technical specialists should perform or assist with the technical review and preparation of comments as necessary to provide factual and comprehensive reports to the SPA.

b. Assure that the manufacturer has included and signed a certificate on the cover page of the qualification test report. The following example is representative of a typical certification:

> "I certify that the tests described were performed by competent personnel using test facilities acceptable to the Government; that the tests were conducted upon a sample selected from a normal production lot (or other suitable statement when the SPA authorized testing of specifically fabricated samples); and that the items were manufactureed at (location) and by the (methods indicated)."

9–604—REMOVAL OF PRODUCTS FROM QPL

a. Retention on the QPL is not automatic. One of the following is required to retain qualification of products:

(1) The SPA shall review specifications with qualification provisions periodically to determine the need to continue the qualification provision. Such review shall be made at intervals no greater than 2 years. At the time of the review each manufacturer shall be requested to forward to the SPA a certification signed by a responsible official of management, attesting that the listed product(s) is still available from the listed plant, can be produced under the same condition as originally qualified; i.e., same processes, materials, construction, design, manufacturer's part number and meets the requirements of the current issue of the specification. Failure to provide such certification will be cause for removal from QPL.

(2) Periodic feedback of test data.

(3) Complete requalification testing.

The required procedure is either stated in the specification or is provided by the SPA or qualifying activity.

b. Reexamination and Test. Reexamination of a qualified product shall be required by the preparing activity under any of the following conditions:

(1) The manufacturer has modified his product or changed his material or processing sufficiently so that the validity of previous qualifications is questionable.

(2) The requirements in the specification have been revised sufficiently to affect the characteristics of the product.

(3) When deemed necessary to determine that the product continues to meet all of the specification requirements.

(4) When required by retention of qualification requirements in the specification.

c. QA personnel will notify the appropriate SPA and recommend removal of items from the QPL when:

(1) The product offered under a contract does not meet the requirements of the specification (other than isolated failures).

(2) The failure of a manufacturer to notify qualifying activity of a design change.

(3) The manufacturer has discontinued manufacture of the product.

(4) The manufacturer or distributer requests that the product be removed from the list.

(5) The requirements of a revised specification differ sufficiently from the previous issue that existing test data are no longer applicable for determining compliance of the product with the specification.

(6) The conditions under which qualification was granted have been violated.

(7) The product is that of a contractor, firm or individual whose name appears on the "Consolidated List of Debarred, Ineligible, and Suspended Contractor's" (ASPR section I, part 6).

(8) The manufacturer has not complied with retention of qualification requirements.

9–605—EXTENSION OF QUALIFICATION. The SPA may request a review for extension of a supplier's qualification to the same items manufactured in other plants of the same manufacturer or of similar items made in the same plant as the qualified product. QA personnel will investigate such requests and evaluate the contractor submitted item and data, review the proposed place of manufacture, assure that there is a high probability that the item from the new plant or the new product will be produced under adequate controls, and comply with applicable specifications. Reports to the SPA will be complete and contain recommendations for awarding or disapproving qualification, with reasons therefore.

9–606—ESTABLISHED RELIABILITY TESTING. Military specifications for ER parts and components require an inspection element classified as "Extension, Maintenance, and Verification of Qualification for Specific or Established Failure Rate Levels." Failure rates are based upon extensive life test programs and are established at increasingly more severe levels. For example, failure rates may be expressed as one percent per 1,000 hours or increasingly severe rates to 0.001 percent per 1,000 hours. Specific criteria are included in the applicable specifcation for qualifying for each progressively higher reliability level. The appropriate failure rate level is identified on the body of the component by color bands.

9–607—SPECIFICATION WITHIN A SPECIFICATION

a. There are specifications for items such as petroleum which contain a combination of composition and performance requirements. They describe only in a general way the base materials and additives allowed. Since the formulation data is usually proprietary and not available to the QAR, a procedure has been developed for determining that production run material is the same as the sample upon which qualification was based. This procedure imposes a control by placing tolerance limits for specific physical and chemical tests in the specification. These limits are based on the results of the qualification sample and afford the QAR a means to detect changes in product when periodic feedback of test data or monitoring of production is required. This procedure is known as the "specification-within-a-specification" concept.

b. Where the "specification-within-a-specification" concept is noted in a specification, the QAR must utilize the qualification test data or report in order to perform inspection and acceptance of the product. This qualification data can be obtained from the SPA or the PCO, if not available at the contractor's plant.

PART 7

RELIABILITY AND MAINTAINABILITY

9–700—PURPOSE. To explain the objectives of formal Reliability and Maintainability programs as may be contained in contracts and to prescribe the procedures to be followed.

9–701—GENERAL

a. A performance requirement for Government supplies may be set forth within a contract by the establishment of specific quantitative criteria relative to reliability and maintainability. The required reliability of a part, component or system (including end items) can be expressed as the probability (quantitative criteria) that the specified item will perform its required function under specified conditions for a specific period of time. Maintainability can be expressed as the probability that a specified item will be retained in or restored to a specific condition within a given period of time when maintenance is performed according to prescribed methods.

b. Generally when a quantitative critera for reliability or maintainability is expressed in a contract, the contract will require a formalized program to be developed by the contractor in accordance with specifications such as MIL-STD-785, or MIL-STD-470. These standards are used by the contractor as a guide for the development of their program requirements. A formalized program will indicate the demonstration requirements that the items are to be subjected to, in order to prove out the quantitative criteria. When a formalized program is required to be developed by the contractor, the contract will require the approval of the program by the PO. The approved program then becomes the basis for contractor compliance.

c. The inherent reliability and maintainability of an item is established by the design and can only be improved by changing the design. It thus becomes extremely important that all characteristics of the item comply with the design requirement or in the event of a departure from the design requirement, a determination is made that the departure will not have any detrimental effect upon the established quantitative criteria.

d. There are occasions when quantitative requirements relative to reliability and maintainability for a given item of equipment may be stated in the equipment specification or in a contract without a requirement for a formalized contractor developed program.

9–702—RESPONSIBILITIES OF THE QAR

a. At the time the contract is reviewed the QAR shall determine the requirements for reliability or maintainability either from the standpoint of a formalized program requirement, including quantitative criteria, or a requirement for the contract items to meet a stated quantitative criteria without a formalized program requirement. The technical specialist will work with the QAR to identify those tasks to be performed by the Government for assuring that the contractor complies with the contract. Where a formalized program is required to be developed by the contractor, the QAR and technical specialist will jointly review the proposed program prior to its submission to the PO for approval. A contractor developed program should include procedures for the following, as applicable:

(1) The analysis of the design, including the prediction or estimation of product reliability and/or maintainability.

(2) The collection of data, analysis, and formulation of corrective action based upon product failures which occur during engineering evaluation test, product qualification and acceptance tests, product evaluation and improvement programs, and field operations.

(3) Demonstration requirements using military

standards (such as MIL-STD-471 or MIL-STD-781) or using a completely defined demonstration method (sample size, test procedure or test plan, confidence levels, test hours or operations required, number and definition of allowable failures, and so forth).

b. When specific demonstration requirements are included in the product specification or the approved formalized program, the QAR or technical specialist will witness the contractor's performance of prescribed tests. He will review the contractor's test documentation and failure description and analysis reports for accuracy and completeness, and verify that the required number of test hours have been performed.

PART 8

AUTOMATED INSPECTION

9–800—PURPOSE. To explain the various types of automated inspection that a contractor may be utilizing in conjunction with or in lieu of manual inspection, and to provide guidelines to the QAR for the monitoring of this type of activity.

9–801—BACKGROUND. Automated Inspection, particularly of the mechanical variety, is not new; it has been employed in industry in varying degrees for a number of years. Over the past several years, however, the introduction of computers has greatly expanded use of automated inspection. In recognition of the economy and increased repeatability that may be found in automated testing and inspection, as opposed to manual procedures, the use of automated inspections will be greatly expanded in the future.

9–802—GENERAL

a. There are many different types of automated inspection. Three of the most common are discussed here:

(1) Computerized.
(2) Tape driven equipment.
(3) Mechanical.

b. Computers may be of the analogue or digital varieties. Digital computers are used almost exclusively in automatic testing applications. It is possible to have a printout accomplished simultaneously with the performance of the inspection which will give the actual reading of the characteristic or indicate that the individual characteristic is satisfactory. This printout feature requires more time than the inspection, so the computer may be programmed to merely indicate that a test is satisfactory or to indicate that portion which was not satisfactory. The computer may be used for the permanent storage of test results, replacing manual data records. Where a requirement or need exists for an actual printout indicating the results of individual characteristic examinations, it will frequently be accomplished "off line". This arrangement allows for a better utilization of computer time. The manner in which the computer determines that an item of equipment conforms or nonconforms to the stated requirement is a function of programming. Programming also determines the manner in which a printout, if any, will be accomplished.

c. Of all the actions associated with computerized automated inspection, programming is the most important. This determines the characteristics to be inspected, the parameters to which they are inspected, and the sequence of their inspections. Frequently, the program calls for the memory storage of "bits" of information relative to selected characteristics that are used to determine their relationship and acceptance of subsequently inspected characteristics.

d. Tape driven inspection equipment involves an arrangement whereby the equipment is designed in such a manner that a perforated tape will call for the equipment to conduct a test in a certain sequence to measure the adequacy of individual characteristics and to provide a readout or an indication by some other form of signal that the product tested is satisfactory or not satisfactory. As with a computerized operation, the adequacy of the tape that is used to drive the test equipment is extremely important as the equipment can do no more than what the tape directs it to do.

e. While recognizing the advantages of automated inspection, there has been some reluctance on the part of POs to accept computerized or taped testing, particularly of the end item, in lieu of manual testing. Some of this reluctance is caused by the lack of an acceptable industry practice for proving the validity of the programming information. Several methods have been employed by industry to es-

tablish the validity of the programming input to the computer or tape machine. First, the programming itself must be checked and verified. This generally entails a flow charting of the program. In addition, it involves punching a card deck or tape which is run through the computer or tape machine for an initial printout to check for mechanical errors. The printout is examined for typing errors, such as decimal points, zeros, and wording. The deck is then transferred to magnetic tape or to the memory of the computer. There are two ways of trial testing the program for actual use.

(1) The first is to take actual faulty items and run trial checks. This is a very long process, as all variables must be taken into consideration.

(2) The second method is to build a self-test program designed to verify the accuracy of the original program to detect known errors. This can be a more complete test because of the speed of the computer. This method entails making trial runs on both programs until either breaks down. The reasons for breakdown are then examined, be it a breakdown in either the main program or the self-test program. The two are then rerun. This process is continued until satisfactory results are attained.

f. Mechanical automated inspection may take various forms. It may involve an automated gaging operation which in addition to measuring a particular dimension will identify those parts that are out of tolerance, or it may involve a mechanical arrangement whereby a machine through the use of plungers or other apparatus determines if a particular component of an assembly has been installed or not installed. If the requirement is for assuring the installation or the existence of the component, the machine will reject those items not containing the component.

g. Where a contractor is utilizing mechanical automated inspection, his procedures should prescribe for the periodic insertion of known defectives so as to assure that the auomated test equipment or gaging is properly identifying those products that do not conform to the specified requirements. The contractor's procedures should also provide for segregation of material produced between these periodic verifications. This is required because, if the test equipment is not operating properly, it will be necessary to retest material produced during this period.

9–803—ADVANTAGES OF AUTOMATED INSPECTION. There are two basic advantages to automated inspection. The first involves the repeatability of the test or examination. Assuming the repeatability of the Automated Test equipment, this method will provide for a greater degree of accuracy than can be generally obtained through manual inspections, as the accuracy of manual inspections depends upon the capability of the individual performing the test. The accuracy of the individual performing the test is influenced by factors such as, human fatigue, indifference or failure to follow prescribed procedures. The second advantage of automated inspection involves cost. There obviously is a break even point below which it would be more economical to depend upon manual testing or examinations, as opposed to automated inspection. For contracts involving relatively large quantities or where testing involves a considerable expenditure of manhours if accomplished on a manual basis, it is economically feasible to provide for automated inspection. Where the quantity is such to justify automated inspection, and the contracttor proposes to utilize automated inspection for end item acceptance purposes, the QAR should be assured that the PO is aware of the contractor's intent. This will enable the PO to express their opinion relative to the acceptability of automated inspection for end item examinations, and to review to the extent that they consider necessary the methods to be employed by the contractor.

9–804—QAR'S RESPONSIBILITIES

a. In PQA planning, the QAR shall determine if the contractor plans to use automated inspection. Where ATE is used, the QAR should request technical specialist assistance to assure that the system being utilized by the contractor provides for the required assurance of product quality. The specialist and/or the QAR will identify the tasks to be performed by the Government to assure that the contractor complies with contract requirements. The

QAR will review the contractor's system for assuring the accuracy of the ATE and the adequacy and completeness of the ATE programming. The QAR will plan and conduct his PQA program as required by this manual.

b. When the contract does not invoke a specific requirement for a documented ATE validation system, the contractor's method for control and maintenance of ATE and its programming will be reviewed and evaluated based on the characteristics essential to control of product quality. The QAR will include calibration procedures and frequencies for the test equipment for adequacy and for contractor compliance to contract.

c. When mechanical automated inspection is being employed by a contractor, the QAR through procedures evaluation should periodically determine the contractor's compliance to his procedures calling for the periodic insertion of known defective parts into the automated inspection equipment or gaging operation to assure that the equipment or gages are properly detecting the known defectives. The QAR should also review the contractor's compliance with procedures on material segregation and control of rejected parts containers, especially for critical defects.

d. Where computerized or tape driven equipment is used for automated inspection, the QAR through procedures evaluation shall determine the contractor's compliance to his procedures designed to control the repeatability of the test. This may involve the running of a self-test program prior to the testing of an individual item of equipment or for the periodic insertion of an item or product containing known defective characteristic(s) to assure that the testing equipment is properly detecting the known defect. Where a printout is provided, the QAR should include a review of the printout against the requirement to assure that the contractor has properly identified the defective characteristics.

e. PE shall be conducted when the initial production units are inspected or tested. The frequency of evaluation will be based upon the stability of the ATE, maintenance of the equipment, its programming and contractor's compliance with applicable procedures The minimum frequency of evaluation will not exceed 60 days.

f. When PVI is required due to lack of contractor control, contractual requirements or PCO imposed Government inspections, it is normally performed concurrently with the contractor in accordance with section IV, part 4. When witnessing automated inspection, the QAR should verify operator compliance with written instructions particularly where the operator inputs instructions to the ATE to supplement the stored program. Witnessing should include the proper program, identified to the correct revision number or letter, is loaded into the ATE in accordance with instructions and, where interfacing is required, assure that the correct device is used. Where printouts identify defective characteristics, it is not necessary to witness the inspection, however, the data should be reviewed independently by the QAR to the extent necessary to assure product conformance and that the required data is properly recorded as specified in the contract. The prerequisites for performing IPI included in paragraph 4-402 are applicable to automated inspection, and should include a review of the most recent PR/PE of the contractor's calibration system and verification that ATE calibration and repeatability checks have been accomplished as scheduled.

PART 9

TEST PROCEDURES AND REPORTS

9–900—PURPOSE. To provide instructions for processing test procedures and reports and to define the CAO and PCO responsibility for review and approval.

9–901—TEST PROCEDURES

a. Testing is the means of determining product compliance to performance requirements. Contracts normally establish the requirements for testing of items by the contractor. This section concerns itself with formal test programs (specified by the contract) and not the regular production type testing.

b. Written procedures are necessary to promote an orderly test program. Test procedures may be included in Government specifications or prepared by the contractor. Guides for their preparation may be found in MIL-T-18303, and MIL-STD-810. These provisions may be referred to when format is not specified by contract. Approval of test procedures is normally accomplished by the PO, however, on special occasions this may be delegated to the CAO.

c. Prior to the start of a test program, the contractor's test procedures will be evaluated to assure that proposed methods and technical instructions are adequate to demonstrate compliance with technical requirements.

d. Inadequate procedures will be returned to the contractor for corrections prior to forwarding to the PO for approval. Any disagreement between QAR and contractor will be documented and forwarded with the test plan. Disapproval of the test procedures or approval only after the noted corrections are made will generally be recommended to the PO.

e. Forwarding correspondence for procedures found satisfactory will state the depth of review accomplished and recommend approval. When local procedures allow forwarding of test procedures directly to PO, a copy should be routed to the ACO, when assigned.

9–902—TEST SURVEILLANCE

a. The QAR will witness or monitor contractor inspections and tests after procedures are approved. Normally technical specialist (engineer) assistance will be required for Exploratory Development Models, Development Models, Service Test Model, and Preproduction Model Test. The QAR is responsible for the general surveillance of all test programs conducted by the contractor and will notify any involved activity when their services are needed. When contractor is required to give notice of tests, the QAR will assure that the required advance notice is given.

b. Prior to the start of a test program, the QAR will notify the contractor of all inspections and tests that will be witnessed by Government personnel.

c. All measurements witnessed by the QAR will be noted on the original data sheets by initials or DoD inspection stamp adjacent to the recorded data.

9–903—TEST REPORTS

a. After completion of a test program approved by the Government, contracts usually require the contractor to submit a letter type or formal test report to the program approving activity via the appropriate CAO. Such reports should be jointly evaluated by the technical specialist and the QAR. The test report should include method of sample selection, reference to applicable drawing or specification numbers, test procedure approval authority, waivers, deviations, changes incorporated in the tested items or procedures, test failures and corrective action, contractor's evaluations and recommendations (when required). Unless otherwise specified,

the use of the format of MIL-STD-831, should be recommended to the contractor.

b. Endorsement of the report to the PO should contain comments concerning general workmanship, adequacy of test equipment and test methods used, verification that tests were conducted in accordance with the approved procedures, any problems encountered and concurrence or nonconcurrence with the contractor's recommendations.

9–804—REQUEST FOR AND RESULTS OF TESTS. A convenient means that may be used to request performance and results of specific inspections and tests is DD Form 1222.
The form will normally be completed as follows:

a. *Section A—Request for Test.*

(1) *Block 1. To.* Enter the name and address of the Government laboratory, the QAR of the commercial laboratory, or the prime contractor to which the sample is transmitted for tests.

(2) *Block 2. From.* Enter the QAR name, address, including ZIP code, telephone number and Area Code where applicable.

(3) *Block 3. Prime Contractor and Address.* Enter the name and address of prime contractor as shown on the contract. Below, enter the contract number.

(4) *Block 4. Manufacturing Plant Name and Address.* Enter the name of plant from which sample is being submitted, if different from prime contractor. Otherwise, use the word "Same". Below, enter the purchase order or work order number, if applicable.

(5) *Block 5. End Item and/or Project.* Enter the official nomenclature of finished item as listed in the contract.

(6) *Block 6. Sample Number.* Assign a sample number sequentially by Test Item for identification and enter it in this space.

(7) *Block 7. Lot No.* Enter the lot number or other identification where applicable.

(8) *Block 8. Reason for Submittals.* Enter here the test desired, such as First Article Approval, Product Acceptance, Correlation Sample. If there is insufficient space to identify the test, enter "See Remarks" and describe the desired test in that space. The applicable test procedure may be attached or referenced.

(9) *Block 9. Date Submitted.* Enter the date that the sample is actually shipped.

(10) *Block 10. Material to be Tested.* Enter the official nomenclature and part number of component being submitted for test. Also enter brand name if applicable.

(11) *Block 10a. Quantity Submitted.* Enter the unit quantity of product submitted. Also enter the number of packages in which the samples are being mailed when there is more than one package. (Example: 20 pieces, 2 packages.).

(12) *Block 11. Quantity Represented.* Enter the quantity of unit of product in lot represented by the sample. Also enter in parenthesis the estimated quantity of end items in which this quantity of components will be used, if this information does not violate security requirements. If an end item is submitted, no parenthetical figure is necessary. The quantity per lot may be omitted when the information would violate security.

(13) *Block 12. Spec or Drawing for Sample and Its Date.* Self-Explanatory.

(14) *Block 13. Purchased From and Date.* Enter name and address of manufacturer of component, not the jobber or distributor, if different from Space 3. For petroleum contracts enter "N/A" since information is restricted.

(15) *Block 14. Shipment Method.* Enter the type of mail or express shipment used to submit sample to laboratory. (Example: First class, parcel post.)

(16) *Block 15. Date Sampled and Submitted.* Enter the calendar date sample was selected, typed and signed name of pertinent QA personnel indicating his symbol if applicable.

(17) *Block 16. Remarks, Special Instructions or Waivers.* Enter the following, where applicable:

a. When only certain characteristics of the sample are to be tested, list the characteristics.

b. Request return of samples, when applicable.

c. State which tests must be witnessed by QAR.

d. This space may be used as a continuation medium for any other space.

e. Any other comment which will serve to

clarify or expedite the completion of testing or first article approval.

(18) *Block 17. Send Report of Test To.* Enter the name and address of the activity to which the results of the test are to be sent.

b. *Section B—Results of Test.* This section of the form will usually be completed by the addressee or by the prime QAR when tests are to be conducted at the contractor's plant.

(1) *Block 1. Date Sample Received.* Enter the date the sample was selected or the date sample was received from another QAR or Government facility.

(2) *Block 2. Date Results Reported.* Enter the date a telephoned or wired notice of completion is given if in advance of the formal report.

(3) *Block 3. Lab. Report Number.* Enter the contractor's or Government laboratory report number if applicable, otherwise enter "N/A".

(4) *Block 4. Test Performed, Results of Test, Sample Results, Requirements.* Enter date(s) test(s) performed, results of examination and testing, and specification and/or contract requirements. Where contractor's laboratory report adequately describes test results, it may be attached and a note "see attached report number _____" entered in block 4. The following information will be included or attached:

(a) When nonconformance is noted, indicate applicable reference and fully describe nonconformance.

(b) When alternate methods, operations or materials are authorized, the options taken will be noted.

(c) Recommendation whether the sample should or should not be approved and reasons therefore.

(5) *Block 5. Date.* Enter the date the report is signed.

(6) *Block 6. Typed Name and Title of Person Conducting Test.* Self-Explanatory.

(7) *Block 7. Signature.* Enter the signature of the Government tester, QAR, technical specialists who witnessed the test.

9–905—SIGNING OR AUTHENTICATING CONTRACTOR TEST REPORTS

a. *Complete Test(s) Required to be Witnessed by the CAO.* Witnessing of complete tests are seldom necessary to protect the Government's interest and the imposition of such requirements should be rare. When one of these instances does occur, the QARs signature on the contractor's test report or DD Form 1222 means that all tests were witnessed, were performed as specified, and all data recorded on the contractor's test report are correct. In these cases, the annotation "complete test evaluation conducted" will be placed on the contractor's test report directly below the QARs signature. If any part of the test report needs special attention a supplementary sheet will be added providing the additional information. The words "See Supplementary Sheet" will be entered under the statement "complete test evaluation conducted."

b. *Partial Test(s) Required to be Witnessed by the CAO.* In these instances, the QAR's signature means that only some aspects of the test were witnessed, they were performed as specified, and the data pertaining to them recorded on the contractor's test report are correct. In addition, the QARs signature means that the data on the contractor's test report or DD Form 1222 which pertains to aspects of the test not witnessed by the QAR appears to be in conformance with the technical parameters specified for those aspects of the test. In these cases the annotation "Partial Test Evaluation Conducted" will be placed on the contractor's test report directly below the QAR's signature or DoD stamp. In addition, the specific aspects of the test that were actually witnessed by the QAR will be identified, either on the test report or on a supplementary sheet. If any aspects of the test, or the test report data, are in need of special attention, or if the forwarding of supplementary information is deemed advisable, the QAR will attach a supplementary sheet providing the additional information. The words "See Supplementary Sheet" will be entered under the statement "Partial Test Evaluation Conducted."

NOTE: If the request for complete or partial witnessing of a contractor's test(s) does not provide sufficient detail with respect to the actions required, and resolution cannot be achieved with the assistance of a technical specialist, a DD Form 1716, will be prepared and forwarded.

PART 10

VISUAL ACUITY AND COLOR BLINDNESS

9–1000—PURPOSE. To establish a uniform procedure for assuring that the contractor and PQA personnel meet contractual visual acuity requirements.

9–1001—REQUIREMENTS

a. Visual acuity requirements are normally inposed by the PO as a contractual requirement, either by direct contract clause, or by referenced specification, e.g., NASA contracts citing NASA Specification NHB 5300.4(3A) requirements for soldering electrical connections; certain military standards or Service publications covering radiographic or magnetic particle inspections, or welding standards.

b. PQA personnel involved in the inspection of supplies for which the contract requires visual acuity or color vision shall meet the same requirements as those imposed on the contractor.

9–1002—PROCEDURES. When vision requirements are imposed by the contract, PQA personnel shall, by review of contractor's procedures and recorded data, verify compliance with contractual requirements. Color vision tests are the normal methods available for determining ability to distinguish between visible colors. Visual acuity is normally determined by use of the Snellen Eye Chart for far vision or the Jaeger Chart for near vision. In some instances, the contract may cite other methods. Where applicable, the QAR will conduct procedures review and evaluation for visual acuity and color blindness. PQA personnel assigned to the contractor's plant engaged in the performance of the inspections called for by contract involving vision requirements shall arrange, through channels, to take the same eye test imposed on the contractor. Tests for PQA personnel are generally conducted at Government medical facilities.

PART 11

SINGLE STANDARD QUALITY CONTROL

9-1100—PURPOSE. To establish general procedures and conditions under which single standard quality control systems may be employed at contractors' facilities having a mixture of commercial and Government product.

9-1101—BACKGROUND. When a contractor is producing or furnishing similar types of supplies for both Government and commercial use, and it is clearly to the advantage of the Government, the QA element of the CAO and the contractor may agree to the use of a single standard quality control system. As the name implies, single standard quality control means that one system of control applies to both Government and commercial material. Under this system, the contractor agrees to purchase and to manufacture military and commerical material to Government quality requirements.

9-1102—PROCEDURES. The establishment of a single standard quality control system does not imply that all items produced must be subject to Government QA. During periods of production when material is unlikely to be shipped or stored for use on Government contracts, DoD inspection may be reduced or eliminated. Also, Government inspection at source on suborders will not be authorized on items intended for commerical use, unless such items are in the minority on an order and it is clearly to the advantage of the Government to have the entire order source inspected. Otherwise, it will be necessary to treat these items separately and prevent commingling commerical supplies with supplies which have been source inspected by the Government. Items and materials which do not require Government source inspection may be purchased without segregation, except as may be required by the contract.

9-1103—PROCEDURE FOR APPROVAL

a. A contractor desiring to operate under a single standard of quality control will direct his request to the Chief of the QA element of the CAO through the QAR. This element shall investigate, evaluate, and approve, or disapprove the request. Such requests must be accompanied by the following:

(1) Information as to the quantity of commercial supplies being produced together with the amount of Government supplies, and the estimated duration of concurrent production.

(2) Written agreement of the contractor that:

(a) The standards of quality will be as required by the Government contract.

(b) All materials and supplies not conforming to contract requirements will be handled according to contractually authorized nonconforming material procedures and that disposition established by these procedures will be final and applicable to the entire lot under consideration.

(c) All procedures and operations pertaining to the commonly handled supplies will be subject to the disapproval of the QAR.

(d) Evidence of such a system will benefit the Government.

b. If the Chief of QA element of the CAO determines that a single standard system will be to the best interest of the Government, the request may be approved and the contractor informed in writing. Approved request shall include a statement which effectively notifies the contractor that the approval will not result in increased cost to the Government.

9-1104—QUALITY ASSURANCE UNDER SINGLE STANDARD SYSTEM. Where a single standard system is established, Government QA requirements apply to the entire contractor's operations and all supplies produced thereunder. Where there is any change in the factors used in

approving a single standard system which indicates that the contractor has failed to adhere to the agreement, or that such a system is no longer a benefit to the Government, the QAR shall so notify the CAO, and the contractor will be informed of the decision to cancel the approval. Prior to final cancellation, the contractor may be allowed a reasonable time to permit him to adjust to the required change in operations.

PART 12

QUALITY ASSURANCE STAMPING

9–1200—PURPOSE. To implement ASPR 14–408 and to provide instructions to the QAR for the use, control and disposition of inspection stamps.

9–1201—GENERAL

a. There is one DoD inspection approval marking design for identification of material which has been inspected for conformance to only a portion of the contract quality requirements, and another for material which has been completely inspected for all contract quality requirements at source.

b. DoD inspection stamps are the only authorized inspection stamps to be used by QARs with the exception of stamps used for NASA work.

c. QARs are issued a set of one half inch inspection stamps consisting of partial inspection approval (circular) and a complete inspection approval (square) stamp. The stamps have up to a six character alpha-numerical designation positioned on them which will readily identify the set assigned to each QAR. In addition, special stamping devices such as metal stamps, stencils, stamps other than one half inch in size may be used when necessary. These special stamping devices do not require alpha-numerical designations when impractical e.g., size. Stamps and stamping devices shall be procured by CAOs in accordance with specification requirements, paragraph 9-1207.

9–1202—DESIGNS OF DoD INSPECTION STAMPS

a. *Partial (Circle) Inspection Approval Stamp.* This stamp is circular and is used by the Government representative to identify all contract or subcontract material which has been subjected to only a portion of the contract quality requirements applicable to the material at the time and place of Government PQA. Design of this stamp shows an eagle within a circle.

b. *Complete (Square) Inspection Approval Stamp.* This stamp is square and is used by the Government representative to identify all contract or subcontract material which has satisfied all contract quality requirements. Complete inspection approval establishes that material which once was partially approved has subsequently received complete approval. One imprint of the square stamp will void multiple imprints of the circle stamp. Design of this stamp shows an eagle within a square.

c. *Stamp Specifications.* The specification requirements for stamps are established in Federal Specification GGG-S-735A.

When prescribed stamps will not register satisfactorily on particular surfaces, or materials, stamps or stencils may be made which will register satisfactorily on such sufaces, provided they conform to the specific circular or square design.

9–1203—PROCEDURES

a. The complete or partial inspection approval stamp, as appropriate, shall be applied directly to all material inspected unless it is impractical or prohibitive. Stamps shall not be applied to material in a manner which may degrade the quality of the articles/material.

b. When it is determined to be impractical or prohibitive to stamp all articles directly, stamps shall be applied to tags, cards, labels, or other records associated with the individual articles. In the case of extremely small parts, the inspection card, tag or label attached to the container shall be stamped to indicate the status of all parts in the container.

c. The placing of a DoD inspection approval stamp upon material does not mean that the material has been accepted for delivery by the Government. Acceptance for delivery is ordinarily

evidenced by signing the acceptance block on the inspection and receiving report.

9–1204—NASA STAMPS

a. Serialized NASA stamps shall be used and controlled in accordance with NHB 5300.4(2B) paragraph 2B303 when provided by NASA.

b. When DoD serialized stamps have been provided to QARs working on NASA delegations, these stamps may be substituted for NASA stamps. DoD serialized stamps will be used in accordance with instructions herein.

c. When DoD serialized stamps have been issued, NASA stamps shall be returned to the NASA installation which issued them. Note that the identification symbols in Appendix B, NHB 5300.4(2B) identify NASA contract and purchase order source and do not identify stamp source.

9–1205—CONTROL OF STAMPS

a. All stamps issued to QARs shall be recorded by the CAO stamp custodian. This record will indicate type, size, and alpha-numerical designation and the name of the individual to whom each stamp is issued.

b. A continuing inventory of stamps is required. This may be accomplished on a scheduled basis by month, quarter, or annually as bests fits the CAO operation. A schedule is required, and the inventory may be accomplished by mail. Unusable, destroyed, lost, or excess stamps shall be accounted for and the inventory shall be verified annually.

c. DD Form 1903 shall be used for the control of stamps and will be completed as follows:

(1) *Blocks 1-2. To and From.* Self-explanatory and will be completed by the CAO stamp custodian, office chief, supervisor, or QAR processing the stamps.

(2) *Block 3. Stamps Described.* Check the specific action taking place. Enter name of QAR or QA element involved in the transaction.

(3) *Block 4. Stamp Specifications.* Forms prepared for issuing stamps to individual QA personnel, and for transfer of stamps, will have stamp impressions placed in the applicable blocks. The alpha-numerical designation must be clear. Forms completed by individual QA personnel for inventory of stamps will also have stamp impressions placed in applicable blocks. Forms completed by stamp custodians for inventory of stock on hand, for requests for stamps for stock, and for reporting lost, excess, destroyed, or returned stamps will have the number of stamps reported entered in the applicable blocks.

(4) *Block 5. Remarks.* Enter any necessary explanations of actions being taken. Include details of transfers between individuals, offices, and all circumstances surrounding lost or destroyed or excess stamps.

(5) *Block 6, 6a and 6b. Name, Signature, Office Symbol and Date.* Sign for all actions except acknowledging receipt of stamps.

(6) *Block 7, 7a and 7b. Name, Signature, Office Symbol and Date.* Sign when acknowledging receipt of stamps.

9–1206—DISPOSITION OF STAMPS. When stamps become unusable or excess, disposition shall be as follows:

a. *Unusable.* These stamps will be completely defaced by grinding or other means to make the impression definitely obscure.

b. *Excess.* These stamps should be reallocated or stored. If the quantity of excess stamps becomes far greater than anticipated future needs, disposition shall be accomplished in accordance with approved local procedures.

9–1207—STAMP ALPHA-NUMERICAL DESIGNATIONS ASSIGNMENTS. Stamps shall be procured in accordance with Federal Specification GGG-S-00735A.

a. The identifying alpha characteristic assigned to each Military Department is:

(1) Army	—A
(2) Navy	—N
(3) Air Force	—F
(4) DSA	—D
(5) DCAS	—C

b. The location of the characteristic designator assigned to each Military Service will be as follows:

(1) Alpha designator on the left of the stamp

impression (eagle's right wing) represents the Military Service.

(2) Alpha designator on the right of the stamp impression (eagle's left wing) represents the major command/DCASR.

c. A 4-digit alpha-numerical/numerical series shall be centered and positioned under the design indicating the individual to whom the stamp is assigned.

d. The alpha-numerical characteristic designator series assigned to each DCASR is:

(1) Atlanta	CA	1-9999
(2) Boston	CB	1-9999
(3) Chicago	CI	1-9999
(4) Cleveland	CO	1-9999
(5) Dallas	CT	1-9999
(6) Los Angeles	CL	1-9999
(7) New York	CN	1-9999
(8) Philadelphia	CP	1-9999
(9) St. Louis	CS	1-9999

PART 13

SUPPLYING PQA RECORDS TO PURCHASING OFFICES

9–1300—PURPOSE. To establish uniform policy and procedures for supplying QA reports required by DoD purchasing activities.

9–1301—GENERAL. There may be occasions where the PO will request information or data relative to the results of a specific Government inspection activity. To the extent possible, the records and forms prescribed in this manual will be used to satisfy these requests. Military Department/agency forms will not be utilized where the forms normally used by the QAR will suffice, or without prior coordination and agreement between the PO and CAO.

9–1302—POLICY

a. Copies of QA records resulting from normal QA activities will be provided purchasing activities when prescribed by a QALI, SIR, commodity manual, a specific contract, or when needed to investigate and resolve specific commodity problems. The QA information requested is operational in nature and exempt from a RCS in compliance with current regulations. A QA record is one specified in joint services PQA manuals, prepared by the QAR to record the results of PQA findings during the accomplishment of the QA service performed on a specific contract at a contractor's plant.

b. Requests from DoD purchasing activities for summarizations or special presentation of operational data not routinely maintained by the CAO/QAR require assignment of an RCS. If requests for information of this type are received without an RCS, the requests will be referred to the CAO Reports Management Office (the organizational element designated responsibility for all reports and RCS matters). However, this does not preclude direct contact between the QAR and PO to resolve the problem expeditiously when necessary.

c. Transmission of QA information will be accomplished in the most economical and effective manner in response to justified needs of the DoD purchasing organizations.

9–1303—PROCEDURES

a. The QAR will comply with requests for QA records as provided in paragraph 9-1302a. Generally, the RCS will not apply and therefore will not require a citation of RCS exemption. However, if the QAR is in doubt regarding the RCS exemption, the requirement will be referred to the Reports Management Office for a decision. Unless the Reports Mangement Office decides to the contrary, the QAR will provide the requiring activity with the QA reports.

b. If the QAR is requested to furnish information other than defined in paragraph 9-1302a above, the request will not be honored unless an RCS is assigned. QAR compliance with the reporting requirement will not be accomplished until approval is obtained from the Reports Mangement Office.

PART 14

CONFIGURATION MANAGEMENT

9-1400—PURPOSE. Provide instructions related to PQA actions for assuring that contractor's configuration mangement system and implementing efforts are consistent with and in compliance with contract requirements.

9-1401—GENERAL

a. Configuration management is aimed at providing controls to establish, process, and maintain documentation of hardware in systems and equipment procurements. These controls serve to provide the hardware that can be produced, operated and supported, as planned. A formal configuration identification is established to the Government's interest with strict control over all changes to assure that hardware/software matches the required functional and physical (as well as other specified) characteristics.

b. The configuration management process is tailored to the particular CI whether it is developed at Government or private expense.

(1) For less complex CI's (e.g. test meters) configuration management may require nothing more than the control of applicable specification, followed by acceptance inspection of items produced. Conversely, complex CI's (e.g. missile systems) may require a highly organized configuration management system to assure achievement of program objectives.

(2) The application of configuration management to privately developed items, whether simple or complex, must recognize the constraints of rights in data of ASPR, section IX, part 2, as applied in a contract, and the inherent absence of the Government's right to control the detailed configuration of a privately developed item.

(3) For reparable CIs developed at Government expense, documentation of design is required to the level of nonreparability. This consists of detail specifications, drawings and associated lists, including the detail design of all interfaces. Documentation for reprocurement purposes, without incurring design proliferation, may include design to the level of detail necessary.

(4) For nonreparable CIs developed at Government expense, the documentation shall include form, fit, and function. This describes the physical and functional characteristics of the item as an entity, but does not describe characteristics of the elements that make up the item. Documentation for reprocurement purposes, without incurring design proliferation, may be to the level of detail necessary. For nonreparable items that are also expendable, the procurement configuration identification may consist of a detail design specification (as in clothing and subsistence items), or of a detail design specification incorporating performance requirements and certain drawings, where interchangeability or other interface considerations prevail (as in ammunition).

(5) For privately developed reparable and nonreparable CIs, documentation shall be for form, fit, and function. However, subject to rights in data other design data may be purchased for items that the Government intends to repair. In these cases, the configuration within the item may be changed at the producer's discretion, unless the Government negotiates an agreement to control design beyond form, fit, and function documentation.

c. Although current contracts specify the configuration management systems of respective departments, coordinated standards have been developed for new procurement actions to include the following:

(1) MIL-STD-100 Engineering Drawing Practices
(2) MIL-STD-480 Configuration Control—Engineering Changes, Deviations and Waivers
(3) MIL-STD-481 Configuration

Control—Engineering Changes, Deviations and Waivers (Short Form)
(4) MIL-STD-482 Configuration Status Accounting Data Elements and Related Features
(5) MIL-STD-490 Specifications Practices
(6) MIL-STD-1000 Drawings, Engineering and Associated Lists
(7) MIL-S-83490 Specifications, Types and Forms
(8) Defense Standardization Manual 4120.3-M.

9–1402—CONTRACT REQUIREMENTS

a. When the Government contracts for configuration management, the requirement is set forth in the DD Form 1423. This form is used with the appropriate DD Form 1664, of the Authorized Data List to identify the essential contractual requirements for configuration management.

b. The contractor's configuration management plan interfaces with his quality program (MIL-Q-9858A) or inspection system (MIL-I-45208A) particularly in the area of drawings, documentation and changes. The extent of management exercised by contractor is dependent upon the item's complexity, quality and quantity and the controls needed to assure achievement of system/equipment objectives. The quality program/system requirements for drawing, documentation and changes extend to the drawings and changes provided by subcontractors.

9–1403—ELEMENTS OF CONTROL IN CONFIGURATION MANAGEMENT. The contractor is required to develop, coordinate with the proper Government agency, and implement a plan for effective configuration management in accordance with his contractual requirements. The plan developed must be tailored to be consistent with the complexity of the hardware involved. For example, for complex item procurements, normally procedures would be required in the following areas:

(1) Drawings, specifications and associated data lists.

(2) Control over the issue, recall and application of changes to the foregoing documentation.

(3) Development and processing of engineering changes.

(4) Control of nonconformances and requests for waivers and deviations.

(5) Control over the development of instruction manuals and related data for contract end items including control of changes or revisions thereto.

(6) Development of base lines.

(7) Performing audits of functional and phyical characteristics.

(8) Integration of reliability, maintainability and value engineering requirements into configuration control documents.

(9) Maintaining status accounting of documentation.

(10) Maintaining the efforts of configuration control in accordance with a time schedule established by contract.

9–1404—PLANNING. QA planning actions shall take into consideration the QA activities involved with each essential function of configuration management: identification and documentation, audit, status accounting, and change control. The extent of activity associated with each function will vary in proportion to the particular item's complexity, quality, quantity and contractual requirements. The QAR's planning should provide for sufficient coverage of the contractor's configuration management plan and ensure quality control of technical data. For example, the attainment of a product base line requires a series of interrelated events which involve drawings and specifications reviews and approvals, FCA and PCA. The contractors plan should include QA actions in these efforts plus the additional support arranged mutually with the purchasing agency or system/project manager. To minimize delays in processing, reviewing and, when authorized, approval of engineering change proposals, the contractors plan should include a flow pattern and the time required to complete each event.

9–1405—QUALITY ASSURANCE RESPONSIBILITIES

a. Review contract work statements and the as-

signment of administration to determine the requirements for configuration management and controls imposed upon the contractor. Obtain clarification of vague or lack of definitive instructions in the contract.

b. Where the contract requires approval of the Configuration Management Plan by the PO, the QAR and technical specialist/engineer will review the plan for its conformance with contractual requirements. If the plan contains deviations from prescribed requirements of the contract, the QAR will advise the PO of such shortcomings at the time the plan is furnished for Government approval.

c. Upon approval of the contractor's configuration management plan by the PO, the QAR will develop a procedures evaluation checklist for the purpose of assuring that the contractor effectively adheres to the approved plan. Particular attention should be given to include in the procedures evaluation checklist pertinent characteristics relating to the contractor's conifguration control and documentation of approved changes.

d. Participate in PCA and monitor corrective action as required. This involves the formal examination of the "as-built" configuration of a unit of a CI against its technical documentation to establish the CI's initial product configuration identification. The PCA is conducted under the direction of the PCO or System/Program Manager. Extent of QA participation is defined in exhibits to the contract or in special instructions from the procuring agency.

e. Review and process Engineering Change Proposals, Waivers, and Deviations in accordance with procedural actions of sections VII and VIII. This function applies to configuration control as described and implemented by Military Standards MIL-STD-480 and MIL-STD-481.

9–1406—QA PARTICIPATION IN ENGINEERING DEVELOPMENT OF A SYSTEM OR HIGH LEVEL CONFIGURATION ITEM. The documentation for the PCI evolves from the detailed design and engineering effort accomplished during the development of a system or high level configuration item. This effort is accomplished generally by the contractor, but with the System/Project Manager participation and control. QA support to PCO/System Program Manager will be as mutually agreed upon, and should be appropriately documented to assure mutual understanding and appropriate notification of the contractor and other interested parties. An early involvement in PCI, either active or passive, should serve as an invaluable asset during production QA performance.

PART 15

CONTRACT QUALITY ASSURANCE FOR COMPUTER SOFTWARE (CS)

9-1500-PURPOSE. To establish uniform policy, assign responsibilities, and provide procedures for accomplishing CQA for Computer Software (CS). These procedures furnish instructions to QARs for uniform performance of CQA on CS.

9-1501-GENERAL

a. The development of CS is a unique process. Whereas in most other manufacturing areas the major effort is expended in production, the major effort for CS is expended during the development process. The contractor must have strong procedural control over the methods used to develop, design, and test. These include library control, corrective action, and configuration management.

b. Due to the complex nature of CS development and the varying degrees of requirements, it is advisable to conduct QA postaward conferences on contracts at all facilities. If a facility has not previously had a contract involving CS, a QA postaward conference must be held in accordance with section III, paragraph 3-102e. At this postaward, the software quality actions required of the contractor and those performed by Government QA personnel should be identified. This assures a clear understanding of actions to be accomplished in administration of the contract.

c. Software Quality Assurance (SQA) staff specialists are available at the Primary Level Field Activity (PLFA) to assist the QAR in establishing a SQA program.

9-1502-BASIC CONCEPTS

a. Quality cannot be tested into a CS product; it must be built in. Therefore, life-cycle oriented SQA is essential to the quality of the CS product and must begin as early as possible after contract award. Figure 9-1500 shows the software development life cycle. The quality of CS cannot be completely assured simply through traditional "end item" inspection or test.

b. The QAR should pay particular attention to the requirements, design, and testing phases of software development.

c. The quality, usability, and maintainability of the deliverable software will be greatly influenced by the quality of the software documentation, i.e., the plans, procedures, specifications, and other data items that are produced during software development.

9-1503-PLANNING

a. The importance of early planning cannot be overemphasized. Contract review will be accomplished by the QAR on all CS related prime contracts, purchase orders, and subcontracts when source inspection of the CS is specified, and will be documented on DD Form 1904-1, Computer Software Contract Review and Planning Document. A completed copy of DD Form 1904-1 shall be provided to the cognizant CAO QA technical element. The QAR shall retain a copy of the completed DD Form 1904-1 for the QA contract file. The

QAR shall also review any QALIs and plans for any specific CO requirements.

b. The QAR shall review the contract for appropriate Software Quality Program (SQP) requirements. Listed below are some of the essential elements that should be included in the contract. Omission of any of these elements along with any other contract deficiencies or ambiguities shall be reported to the CO via ACO on DD Form 1716, Contract Data Package Recommendation/Deficiency Report.

(1) Mission Critical Computer Resources (MCCR), which includes CS, will be specified and treated as configuration items (i.e., Computer Program Configuration Items (CPCIs)/ Computer Software Configuration Items (CSCIs)).

(2) Deliverable software must be listed as a Contract Line Item Number (CLIN) and identified on DD Form 1423, Contract Data Requirements List (CDRL), or its authorized equivalent.

(3) DD Form 1664, Data Item Description (DID), shall be referenced for each data item that is listed on the CDRL.

(4) Every contract under which CS may be originated, developed, or delivered is required by DFAR 27.404-2(b)(2) to contain the Rights in Technical Data and Computer Software Clause (DFAR 52.227-7013). The clause establishes the circumstances under which the Government secures rights in both technical data and CS. When the CO determines a need for CS, as specified on DD Form 1423, but the time or place of delivery is not firm, DFAR 27.410-1(b) requires that the Deferred Delivery of Technical Data or CS Clause (DFAR 52.227-7026) be included in the contract.

c. FAR 46.402(e) requires agencies to perform CQA, including inspection at source, if a higher-level contract quality requirement is included in the contract, and/or Government inspection during contract performance is essential.

(1) Whenever a contract specifies destination inspection for CS, the QAR shall prepare DD Form 1716 alerting the CO to FAR 46.402(e). If it is determined to be in the best interest of the Government (FAR 46.403a(7)), the QAR should recommend that source be designated as a place where the Government will perform QA functions.

(2) When a contract specifies source inspection and source acceptance "SS," or source inspection and destination acceptance "SD" of the hardware for a system, and destination inspection and destination acceptance "DD" of the CS on DD Form 1423, such designations do not relieve the QAR from monitoring the contractor's SQP for compliance to the system CQA requirements. Rather, they only relieve the QAR from performing CQA for that specific CDRL data item. The QAR must still review and evaluate the contractor's procedures and process controls that are established to comply with the system level CQA requirements.

d. The QAR shall review and evaluate all DD Forms 1423 to determine CQA requirements for each CDRL item. The indication of "DD" or "LT" for a CDRL item does not necessarily relieve the QAR of total CQA responsibilities for the item(s).

(1) When block 7 of DD Form 1423 contains "DD," only CQA of the contractor's system for data development and control of technical data is performed, unless modified by a QALI.

The QAR is required to assure only that the contractor has a quality program, as required by contract, and that it is controlling the adequacy of data being provided to the Government. If items, such as test procedures, quality procedures, or other similar procedures, are being purchased in this manner, the QAR shall request to be included on distribution by preparing DD Form 1716. The QAR shall request the change be made to allow for comments to the technical activity.

(2) When block 7 of DD Form 1423 contains "LT," it signifies the desire not to have a DD Form 250, Material Inspection and Receiving Report, for each and every piece of technical data developed by the contractor. Documents such as quality plans, test procedures, etc., should, as a minimum, be routed to the QAR for information. Preferably, the QAR should receive a copy for comment. The QAR will prepare DD Form 1716 requesting the CO provide copies of these documents for information and comment when appropriate. Additionally, the QAR shall issue DD Form 1716 when the Software Quality Program Plan (SQPP), Software Configuration Management Plan (SCMP), or Software Development Plan (SDP) is not identified as source inspection on the DD Form 1423.

e. The FAR requires the CAO to perform CO imposed inspections and, when appropriate, make recommendations for their improvement. The cognizant QAR must be mindful of the required manpower resources, for in all cases, the QAR must perform CO imposed inspection until contract completion or relief is granted in writing. The QAR will evaluate CO imposed inspection instructions and recommend elimination or reduction of those considered unwarranted or excessive. The cognizant QAR will challenge CO imposed inspection instructions when they are in conflict with FAR requirements. Requests/recommendations will be routed through supervisory channels for appropriate action.

f. As a part of the planning process, the QAR will discuss and document, with the contractor's CS or quality personnel, the Government's intention to verify the contractor's SQP through:

(1) Audits of CS reviews.

(2) Procedures Review (PR) and Procedures Evaluation (PE).

(3) Product Verification Inspection (PVI).

The QAR will determine, with the contractor's personnel, those areas where review, evaluation, or verification can be performed.

9-1504-PROCEDURES REVIEW (PR). The QAR will perform PR in accordance with section IV, part 2, Procedures Review. Review criteria shall be based on CS contractual requirements. Figure 9-1501 sets forth the procedural elements that may be applicable.

9-1505-PROCEDURES EVALUATION (PE). The QAR will perform PE as described in section IV, part 3, Procedures Evaluation. Evaluation of applicable CS checklist characteristics is to be performed initially and repeated within 30 days thereafter. Frequencies may be adjusted when justified by objective quality evidence. Intervals shall not exceed those specified in figure 9-1501. (Note: PE should be tailored to the phase of development and the activities being performed. Not all of the PE elements are relevant to each phase of development. PEs such as programming standards and testing usually cannot be performed until after critical design review.)

9-1506-PRODUCT VERIFICATION INSPECTION (PVI)

a. The extent of product verification will depend on and vary according to the results of PE, corrective action, and quality data evaluation. PVI may be either increased or decreased by QALIs or other specific CO requirements.

b. PVI of CS shall consist of the following:

(1) CS Document Evaluation. CS documentation evaluation will be conducted by the QAR IAW section IV, part 4. Additionally, the QAR shall assure that top-down requirements traceability from the system specification through the software development and product specifications are accomplished and reflected in the code. When appropriate, independent verification shall be utilized by the QAR.

(2) CS Test Evaluation. Contractually required CS test evaluation will be performed IAW section IV, part 4, and will include the following areas:

(a) Pretest Evaluation:

1 Ensure that all test equipment is calibrated.

2 Ensure that all test procedures have been approved by the Government when required and are of the correct revision.

3 Ensure that the CS under test is the correct version.

4 Ensure that all support CS (e.g., simulators) involved in the test have been validated.

(b) Test Evaluation:

1 Ensure that the test is performed in accordance with the approved test procedures.

2 Ensure that external data are entered properly into the test and are the correct version.

3 Ensure that all test failures or anomalies are properly documented.

4 Ensure that all test outputs are identified and/or documented as required and secured to prevent modification.

(c) Post-Test Evaluation:

1 Ensure that appropriate documents (e.g., discrepancy reports, status reports, analysis reports) are generated for failures or anomalies.

2 Ensure that all test items and associated documentation are identified and controlled for possible use in the event that test repeatability must be demonstrated.

3 Assess retest requirements.

4 Ensure that the test output media and format are in compliance with applicable specifications.

(3) The results of PVI shall be recorded on DD Form 1711, Observation Record, as described in section IV, part 4, paragraph 4-406. Block 3 of DD Form 1711 shall reflect CS documentation evaluation or CS test evaluation, as appropriate.

9-1507-CORRECTIVE ACTION. The QAR will request corrective action in accordance with section IV, part 5, except that Method A will not be used where there is any effect as to product (i.e., deliverable or nondeliverable CS and associated documentation) design, performance, or functional requirements.

9-1508-SUBCONTRACTOR CONTROL

a. The prime contractor QAR shall handle all subcontracts for the CS system with embedded software or subcontracts with MCCR as major subsystems. The QAR's basic responsibilities for

requests for CQA actions (DD Form 1232, Quality Assurance Representative's Correspondence) will be consistent with section V, part 1. It is essential that the request for CQA actions contain specific CQA responsibilities for the deliverable CS, as well as any associated nondeliverable CS. The QAR may request full CQA implementation or selective evaluation in accordance with section V, part 1. Requests for selective evaluation may consist of but are not limited to:

(1) Performance of the applicable CS PE elements.

(2) Performance of CS product verification for those characteristics which cannot be accomplished at the prime contractor's facility.

(3) Review of CS quality program for compliance with purchase order or subcontract CS quality requirements.

b. The prime contract QAR shall review the prime contractor's procedures for subcontract/supplier controls in accordance with section V, part 1. As a minimum, the following areas should be included:

(1) Applicable prime contractural requirements (e.g., DoD-STD-2167, DoD-STD-1679, MIL-S-52779A, DoD-STD-480, MIL-STD-483, MIL-STD-490, MIL-STD-1535A (USAF), and MIL-STD-1521) are incorporated into the subcontract or purchase order.

(2) Purchase orders contain a complete description of the products ordered.

(3) The conformance of CS to subcontract requirements is assured by appropriate surveillance at the subcontractor facility.

9-1509-FIRMWARE. Firmware is the combination of software instructions/data and the media in which it resides that cannot be modified without the use of specialized devices. The development of software, which will reside in firmware, shall be subject to the provisions of the development specification in the contract and all required CQA actions shall be performed. Firmware devices shall be subject to a contractor's configuration management procedure. Verification techniques shall be used to ensure that firmware production techniques assure that the firmware correctly contains the required software and data.

9-1510-DEFINITIONS

a. Computer Program. A sequence of instructions suitable for processing by a computer. Processing may include the use of an assembler, a compiler, an interpreter, or a translator to prepare the program for execution as well as to execute it (IEEE-STD-729).

b. Computer Program Configuration Item (CPCI). A CPCI is a composite of hardware or computer software, or both, or any discrete portion of either, which satisfies an end use function and is designated by the Government acquisition activity for configuration management (DoDD 5010.19, DoD Configuration Management Program).

c. Computer Resources. The totality of computer hardware, software, personnel documentation, supplies, and services applied to a given effort (DoD-STD-2167).

d. Computer Software. A combination of associated instructions and computer data definitions required to enable the computer hardware to perform computations or control functions (DoDD 5000.29, Management of Computer Resources in Major Defense Systems).

e. Computer Software Component (CSC). A functional or logically distinct part of a computer software configuration item. Computer software components may be top level or lower level (DoD-STD-2167).

f. Computer Software Configuration Item (CSCI). A collection of hardware or software elements treated as a unit for the purpose of configuration management (IEEE-STD-729).

g. Interface Control. Interface control comprises the delineation of the procedures and documentation, both administrative and technical, contractually necessary for identification of functional and physical characteristics between two or more CIs which are provided by different contractors/Government agencies, and the resolution of the problems thereto (MIL-STD-483).

h. Software Engineering. Science of design, development, implementation, test, evaluation, and maintenance of computer software over its life cycle (DoDD 5000.29).

i. Support Software. All programs used in the development and maintenance of the delivered operational programs and test/maintenance programs. Support programs include, but are not limited to compilers, assemblers, emulators, builders, and loaders required to generate machine code and to combine subprograms or components into a complete computer program; debugging programs; stipulation and simulation programs used in operator training sites; data abstraction and reduction programs applicable to operational programs; test programs used in development of operational programs; programs used for management control, configuration management, or document generation and control during development (DAN 384); a computer program which facilitates the design, development, testing, analysis, evaluation, or operation of other computer programs (NASA); software tools used by project personnel for software design, debugging, testing, verification, and management (DACS Glossary).

COMPUTER SOFTWARE DEVELOPMENT LIFE CYCLE

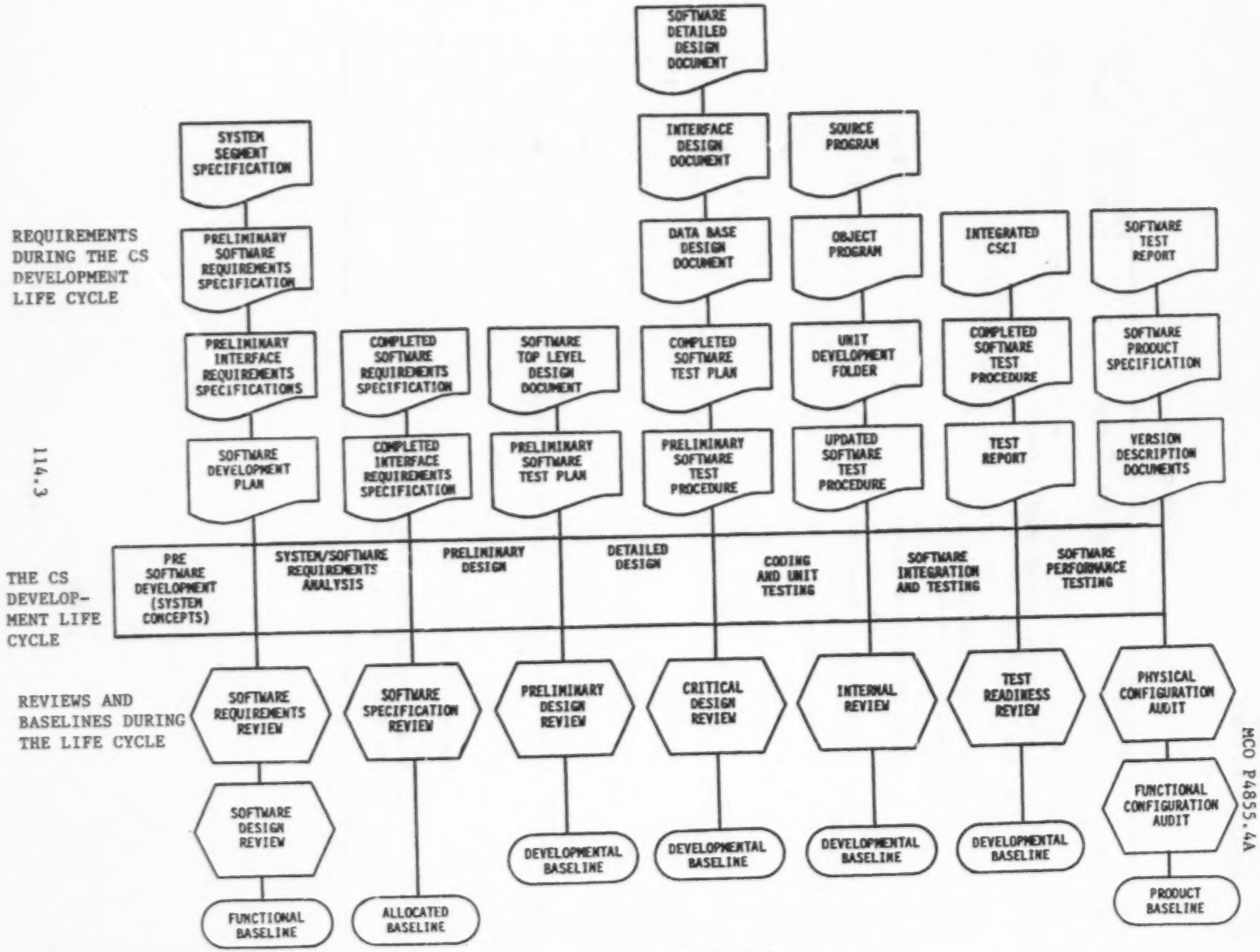

Figure 9-1500

FIGURE 9-1501

ALPHA DESIGNATION	PROCEDURAL ELEMENTS	FREQUENCY - NOT TO EXCEED (DAYS)			
		30	60	90	180
CS-A	Organization, Responsibilities, and Authority				X
CS-B	Quality Assurance/Initial Quality Planning				X
CS-C	Computer Program Design		X		
CS-D	Configuration Management	X			
CS-E	Library Controls	X			
CS-F	Documentation	X			
CS-G	Programming Standards		X		
CS-H	Testing	X			
CS-I	Corrective Action	X			
CS-J	Reviews and Audits	X			
CS-K	Tools, Techniques, and Methodologies		X		
CS-L	Records		X		
CS-M	Subcontractor Control			X	
CS-N	Work Instructions/Work Tasking and Authorization Requirements		X		

PART 16

MISCELLANEOUS

9-1600 PURPOSE. To provide instructions for the use of certain miscellaneous forms in addition to those already prescribed throughout the manual.

9-1601 DD FORM 1232, QUALITY ASSURANCE REPRESENTATIVE'S CORRESPONDENCE. This form is designed to enable the QAR to transmit CQA actions. Variations to meet specific QAR situations are authorized. The form will usually be completed as follows:

a. Block 1, To. Block 2, From. Self- explanatory.

b. Block 3, contract, P.O. or OI Number. Enter the contract, purchase order or office instruction number.

c. Block 4, Item. Enter an identification of the operation or item involved.

d. Block 5, Prime Contractor Name, Address and Zip Code. Enter the name and address of the prime contractor.

e. Block 6, Plant Name and Address. Enter the name and location of the plant.

f. Subject. Provide a subject, such as, Request for Selective Evaluation, Request for Information, or some other appropriate subject. When requesting a selective evaluation, provide, as a minimum, the following information:

(1) The CQA actions desired and attach a copy of the purchase order. Also, provide the name and location of the subcontractor.

(2) Reason for requesting the CQA action.

(3) Outline specific characteristics that must be verified and for what duration.

g. Block 7, Signature of QAR. Self-explanatory.

h. Block 8, Date prepared. Enter the date the form was prepared.

9-1602 DD FORM 1901, PLANT VISIT REQUEST/REPORT

a. This form may be used to request technical assistance on specific problems. It may also be used by QARs, supervisors, and staff personnel to record visits to specific facilities.

b. Preparation of this form is self-explanatory.

PART 17

DOD PARTS CONTROL PROGRAM

9-1700 PURPOSE. To provide guidance to QARs in the implementation of the DoD Parts Control Program (PCP).

9-1701 SCOPE. The DoD PCP is an integral part of the acquisition process for support of major weapon systems for new design, modification of systems, subsystems, and equipment. QARs play a responsible and vital role in the program, and QARs are the primary focal points for ensuring that the PCP is properly implemented by contractors and subcontractors.

9-1702 BACKGROUND

a. DoDI 4120.19, DoD Parts Control Program, establishes guidelines and requirements for the DoD PCP. The objectives of the DoD PCP are to:

(1) Promote the use of standard parts of known performance in the design, development, production, or modification of equipment and weapons systems.

(2) Apply engineering techniques that will enhance systems commonality, interchangeability, reliability, maintainability, standardization, and interoperability.

(3) Increase standardization of piece parts, which will result in a greater demand for standard parts, reduce parts inventory, increase production runs, and increase competition.

b. MIL-STD-965 (latest revision), PCP, establishes the guidelines and requirements for implementing a PCP. MIL-STD-1546, Parts, Materials, and Processes Standardization, Control and Management Program for Spacecraft and Launch Vehicles, should be substituted for MIL-STD-965 when the end item is either a spacecraft or a launch vehicle. SAMSO STD 77-7, Standardization and Control of Parts, Materials, and Processes for Missiles and Support Equipment Program, should likewise be applied. However, the QAR's responsibilities, as set forth in paragraph 9-1703, still apply to each applicable standard.

c. The DoD PCP is implemented through the Military Parts Control Advisory Groups (MPCAGs), as established under DoDI 4120.19, by the Assistant Secretary of Defense for Production and Logistics; MPCAGs are located at Defense Electronics Supply Center, Defense General Supply Center, Defense Construction Supply Center, and Defense Industrial Supply Center. These engineering advisory groups make recommendations concerning the Program Parts Selection Lists (PPSLs) (incorporated in the Parts, Materials, and Processes Selection Lists (PMPSLs) within MIL-STD-1526 and ICBM Standards Manuals within SAMSO STD 77-7), resolve problems associated with use of nonapproved parts, and advise COs and contractors of their findings, thus enabling the COs to initiate corrective action. The MPCAGs advise the Military Services and defense contractors on the use of standard parts and collect data for developing and updating military specifications.

d. Defense contracts which incorporate MIL-STD-965 will also establish the requirement for development and submittal of a PPSL by means of appropriate Data Item Descriptions (i.e., DI-MISC-80071 and DI-MISC-80072). The PPSL lists all parts which are approved for use on the contract and

authorized for incorporation into the deliverable item. The contractor must ensure that only those parts listed (or approved for listing) in the PPSL are used in the design and production of the end item.

e. Piece parts contained in unmodified off-the-shelf equipment and unmodified Government Furnished Equipment (GFE) used in the end item are not subject to the PCP and are not covered by the PPSL. In addition, contracts for the purchase of off-the-shelf equipment(s), software contracts, training device contracts, and study contracts not involving the selection or recommendation of specific parts should be exempt from using the PCP.

f. A contractor who is contractually required to implement a PCP must:

(1) Ensure that only parts listed on the CO approved PPSL are incorporated into the deliverable item.

(2) Ensure that PPSL information is provided to each subcontractor and ensure that subcontractors implement the PCP for appropriate subsystems/ equipment acquisition.

(3) Identify to the MPCAG and CO any changes required in the parts specification to meet equipment, system, or subsystem requirements.

(4) Identify to the CO those parts which will have a negative impact on item performance, safety, or schedule.

(5) Implement the MPCAG recommendations unless written disposition to the contrary is obtained from the CO.

(6) Establish a Parts Control Board (PCB) under those contracts which specifically require the contractor to do so. The PCB membership includes personnel from both the prime contractor and subcontractor. The Board is responsible to ensure maximum use of standard parts, to act on recommendations for additions/deletions to the PPSL, and to ensure timely implementation of parts decision.

9-1703 QAR RESPONSIBILITIES

a. QARs will review all weapons system/equipment contracts for MIL-STD-965 applicability. MIL-STD-965 should be called out in contracts if:

(1) Fabrication of breadboard models or rough experimental prototypes when follow-on contract development phases (such as advanced development, engineering development, etc.) are anticipated.

(2) Design and fabrication for systems or equipment(s) which meet the performance requirements of a specification or to establish technical requirements will lead to a production baseline model.

(3) The design contract for production of systems or equipments calls out MIL-STD-965.

(4) Modifications or changes are to be made to production contracts that did not have MIL-STD-965 called out originally. Only new parts used in the modification will be affected.

(5) The Government is buying engineering drawings against Level 2 or 3 requirements of DoD-D-1000 on DD Form 1423.

(6) The systems or equipments are required to be provisioned as dictated in the contract (i.e., MIL-STD-1561, MIL-P-15137, MIL-P-1375, etc.). (The provisioning requirements are usually listed on the CDRL.)

(7) The contract requires nomenclature requests (i.e., MIL-N-18307, MIL-STD-444, MIL-N-7513, MIL-STD-196, etc.) on the systems or equipment(s). (The nomenclature request requirements are usually listed on the CDRL.)

(8) The configuration management program (i.e., MIL-STD-1521 or MIL-STD-483) is invoked in the contract.

(9) Design in a reprocurement contract is not fixed and new or revised parts may be developed and stocked in DoD inventory.

b. When contract review indicates MIL-STD-965 was required but not invoked, the QAR will submit DD Form 1716 to the CO recommending contract modification. The justification shall address the inclusion of MIL-STD-965 based on DoDI 4120.19. The QAR shall include the DD Form 1716 in the PCP reports.

c. When MIL-STD-965 is contractually imposed, the QAR will ensure that the contractor has systems/controls in place which preclude procurement of parts listed on drawings or used in hardware that were not listed on the approved PPSL or approved for listing by the CO with appropriate Objective Quality Evidence (OQE). The QAR will also review drawings and associated lists to assure that only parts listed on the PPSL with the approval codes (i.e., A0, A1, and A2), if codes are listed, are identified on those documents. The QAR shall obtain a current PPSL or be placed on distribution for temporary retention to review against the drawings and associated lists from the contractor or CO. The QAR shall develop a PE checklist to evaluate the contractor's written and implementation procedures on systems/controls including drawings, documentation, and changes procedures to assure that all applicable requirements of MIL-STD-965 are properly addressed and controlled.

d. The QAR shall inspect a sufficient amount of hardware(s) in each contract utilizing some elements (i.e., IPI, PE, and/or PVI) of CQAP to ensure confidence that the hardware(s) presented is/are properly represented by drawings and associated lists, and is/are contained in the approved PPSL or other CO approved listings. The QAR shall conduct the evaluation on a continuous basis in accordance with any applicable Quality Assurance Letter of Instructions, imposed Acceptable Quality Levels, and locally established procedures; and properly annotate the DD Form 1711 to document actions accomplished.

e. When QARs at subcontractors' plants receive a letter of delegation and MIL-STD-965 is not called out but should have been, check with the prime contractor QAR to verify if MIL-STD-965 is applicable. (NOTE: See paragraph 9-1702e.)

f. When evidence indicates that parts were not listed on the approved PPSL or approved for listing by the CO with appropriate OQE have been used, the QAR/QAS shall issue to the contractor DD Form 1715, Quality Deficiency Record (QDR), requiring immediate corrective action. Method A corrective action will not be used. PCP corrective action will be identified with the prefix 'PCP' in block 2, Reference Number, of the DD Form 1715. When appropriate, the QAR shall escalate the level of corrective action to a Method C, following established administrative procedures. The QDR shall include the following information as a minimum:

(1) Contract number.

(2) Program name.

(3) Procurement office.

(4) Configuration item and model number, when applicable.

(5) Assembly name and drawing number.

(6) Part number of part not an approved PPSL.

(7) Part identification used on the next higher assembly.

(8) Part or type designation (i.e., AN/URM-123) and nomenclature identifications required, if known.

(9) Appropriate explanatory comments and remarks.

g. A QAR shall not accept any end item which contains parts not listed on the approved PPSL or approved for listing by the CO with appropriate OQE without first obtaining prior approval from competent authority. If a QAR discovers that accepted end items contain parts not listed on the approved PPSL or approved for listing by the CO with appropriate OQE, the QAR shall promptly notify the CO of that fact.

h. Operation Support Branch personnel shall provide assistance, if requested by the QAR, and together with the QAR, participate in the initial evaluation of drawings, documentation, and changes, as well as the initial performance evaluations to verify the contractor's compliance with MIL-STD-965. In those instances where the QAR is required to verify/validate all characteristics, (e.g., First Article, IPI, Physical Configuration Audit) the results of these functions may satisfy the surveillance requirements of the PCP. However, the QAR will still compare hardware and subsequent drawings or PPSL changes.

GLOSSARY

1. Acceptance. The act of an authorized representative of the Government by which the Government assumes for itself, or as agent of another, ownership of existing and identified supplies tendered or approves specific services rendered, as partial or complete performance of the contract on the part of the contractor (ASPR 14-001.6).

2. Acceptable Quality Control System. A contractor's quality control system that complies with the requirements of the contract and demonstrates by operating practice his continuous ability to conform to his established system.

3. Acceptable Quality Levels (AQLs). The maximum percent defective (or the maximum number of defects per hundred units) that, for the purpose of sampling inspection, can be considered satisfactory as a process average (MIL-STD-109).

4. Ammunition. All components and any explosives case or contrivance prepared to form a charge, complete round, or cartridge for cannon, howitzer, mortar, or small arms, or for any other weapon, torpedo, warhead, mine, depth charge, demolition charge, fuze, detonator, projectile, grenade, guided missile, rocket, pyrotechnics; and all chemical agents, fillers and associated dangerous materials.

5. Armed Services Procurement Regulation (ASPR). The Department of Defense's basic statement of procurement policy for the military departments. The ASPR provides uniform policies for the Departments of the Army, Navy and Air Force relating to the procurement of supplies and services under the authority of Title 10, United States Code, Chapter 137.

6. ATE Validation System. Actions taken by the contractor or Government to attest to the accuracy of the Automated Test Equipment (ATE) and adequacy and completeness of the ATE program.

7. Basic Odering Agreement (BOA) (ASPR 3–410.2). This is an agreement between the Government and a specific supplier which contains all the terms and conditions required of a contract in excess of $2500 and normally includes a list of supplies/services to be furnished and a description of the method for determining prices (ASPM No. 2, 3-12).

8. Characteristic. Any dimensional, visual, functional, mechanical, electrical, chemical, physical or material feature or property; and any control element which describes and establishes the design, fabrication and operating requirements of an article or material.

9. Color Vision. Ability to distinguish red, green, blue and yellow colors as prescribed in Dvorine Charts, Ishigara Plates or AOD-HRR tests. A practical test using color coded wires and/or color coded parts, as applicable, will be acceptable for color vision testing.

10. Complex Item. An item having quality characteristics, not wholly visible in the end item, for which contractural conformance must progressively be established through precise measurements, test and controls accomplished during purchasing, manufacturing, assembly, and functional operations either as an individual item or in conjunction with other items.

11. Computer Software. A body of instructions, commands and data needed to cause a computer to execute desired functions. Software may be either deliverable or non-deliverable and may be used to control and operate such items as missile systems, spacecraft, satellites, automated test equipment, and numerally controlled equipment.

12. Concurrent Inspection. That activity where contractor's inspection personnel and Government PQA personnel are concurrently involved in making an initial determination as to the acceptability of product or procedural characteristics.

13. Configuration Management. A discipline applying technical and administrative direction and surveillance to: (1) identify and document the functional and physical characteristics of a configuration item; (2) control changes to these characteristics; and (3) record and report change processing and implementation status (MIL-STD-480).

14. Contract. All types of agreements and orders for the procurement of supplies or services. It includes awards and notices of award; contracts of a fixed-price, cost, cost plus fixed fee, or incentive type; contracts providing for the issuance of job orders, talk orders, or task letters thereunder; letter contracts and purchase orders. It also includes supplemental agreements with respect to any of the foregoing (ASPR 1-201.4).

15. Contract Administration Office (CAO). The office which performs assigned functions, duties, or responsibilities related to the administration of contracts and assigned preaward functions (ASPR 1-201.254d.26). The CAOs within DoD are listed in the DoD Directory of CAS Components, DoD 4105.59-H.

16. Contractor. Any individual, corporation, partnership or association, institution or other entity which is a party to the contract (ASPR 9-107.2).

17. Contractor Data. Contractor records of inspections and tests developed as a result of contractural requirements. These data also include records maintained to control various processes, records of repair and rework, records attesting to the quality of supplies obtained from subcontractors' and contractors' reports of investigations and corrective action.

18. Contractor's Quality Control System. The contractor's overall quality program or inspection system, including inspections and tests necessary to substantiate product conformance to drawings, specifications, and contract requirements, and to all inspection and tests required by the contracts. These requirements are to include contractor personnel making decisions as to acceptability of product and control of procedures and processes. Not included are contractor established dimensions, tolerances, test limits and process controls which may be more stringent than or not included in the contract.

19. Contractor Quality Decision. Documented evidence of a contractor's determination that a characteristic meets the requirements of the applicable contract, specification, drawing or procedure as related to a product, process or procedure.

20. Contract Quality Requirements. The detailed requisites for quality incumbent on the contractor, consisting of all quality requirements contained in a contract; and the detailed contractual requisites provided by ASPR 14-101 incumbent on the contractor to substantiate conformance of product or service to quality requirements of the contract (ASPR 14-001.2).

21. Corrective Action. A series of actions available to the QAR for use with a contractor according to the seriousness of the nonconformance found. These actions require the contractor to correct conditions and assignable causes of nonconformance or defectiveness.

22. Critical Application. An application of an item in which the failure of the item could injure personnel or jeopardize a military mission. Critical items may be either peculiar, having only one application, or commom, having multiple application.

23. Data Evaluation. A systematic, continuous or periodic review and analysis of quality data by the QAR.

24. Design Authority. A contractor, subcontractor, or Government activity having custody of the master (original) drawings delineating the detail design.

25. Deviation. A specific written authorization, granted prior to the manufacture of an item, to depart from a particular performance or design requirement of a specification, drawing or other document for a specific number of units or specific period of time (MIL–STD–480).

26. Engineering Changes

a. *Engineering Change.* An alteration in the configuration of an item delivered, to be delivered, or under development, after formal establishment of its configuration identification.

b. *Engineering Change Proposal (ECP).* A term which includes both a proposed engineering change and the documentation by which the change is described and suggested.

c. *Class I Engineering Change.* An engineering change will be classified Class I when one or more of the factors listed below is affected:

(1) The functional or allocated configuration identification.

(2) The product configuration identification as contractually specified (or as applied to Government activities), excluding referenced drawings.

(3) Technical requirements below contained in the product configuration identification, including referenced drawings, as contractually specified (or as applied to Government activities).

(a) Performance outside stated tolerance.

(b) Reliability, maintainability, or survivability outside stated tolerance.

(c) Weight, balance, moment of inertia.

(d) Interface characteristics.

(4) Non-technical contractual provisions.

(a) Fee.

(b) Incentives.

(c) Cost.

(d) Schedules.

(e) Guarantees or deliveries.

(5) Other factors.

(a) Government furnished equipment (GFE).

(b) Safety.

(c) Electromagnetic characteristics.

(d) Operational, test or maintenance computer programs.

(e) Compatibility with support equipment, trainers or training devices/equipment.

(f) Configuration to the extent that retrofit action would be taken.

(g) Delivered operation and maintenance manuals for which adequate change/revision funding is not on existing contracts.

(h) Pre-set adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number.

(i) Interchangeability, substitutability or replaceability, as applied to configuration Item (CI's) and to all subassemblies and parts of reparable CI's, excluding the pieces and parts of non-reparable subassemblies.

(j) Sources of CI's or reparable items at any level defined by source control drawings.

Note: In the above definition of a Class I engineering change, the words "excluding referenced drawings" in subparagraph 26c (2) will not be interpreted to exclude drawings prescribed directly in a contract by drawing number to define contract line items. Other drawings, whether referenced in documents or listed on associated lists are excluded from 26c (3) but included in 26c (2).

d. *Class II Engineering Change.* An engineering change shall be classified Class II when it does not fall within the definition of a Class I engineering change in 26c (2). Examples of a Class II engineering change are: (a) a change in documentation only (e.g., correction of errors, addition of clarifying notes or views) or (b) a change in hardware (e.g., substitution of an alternative material) which does not affect any factor listed in 26c.

Note: When two or more contractors are producing items to the same mandatory detail drawings, an engineering change which is Class II to the originator may be Class I in impact on the other contractor (s).

27. Engineering Data. Drawings and associated lists, standards, specifications, test procedures, etc., used in the fabrication, inspection, and identifica-

tion of an equipment item.

28. Explosives. The term explosives includes any chemical compound or mixture which, when subjected to heat, friction, detonation or other suitable initiation, undergoes a very rapid chemical change with the evolution of large volumes of highly heated gases which exert pressures in the surrounding medium.

29. First Article. First article includes preproduction models, initial production samples, test samples, first lots, pilot models and pilot lots (ASPR 1-1901).

30. First Article Approval. Involves testing and evaluating the first article for conformance with specific contract requirements before or in the initial state of production under a contract (ASPR 1-1901) and the formal notification to the contractor by the PCO that the first article meets the requirements of the contract (full approval of conditional approval).

31. Government Data. Those records generated by the QAR showing the results of the application of the PQA Programs. Included in these data are records of inspections and tests performed by the Government, record of results of procedures review/procedures evaluation, records of corrective action and reports of investigations.

32. Government Procurement Quality Assurance (PQA). The Government function by which the Government determines whether a contractor has fulfilled his contract obligations pertaining to quality and quantity. This function is related to and generally procedes the act of acceptance (ASPR 14-001.1).

33. Homogeneous. Homogeneity implies that a series or group of units of product should be alike or similar in nature. Units of product subjected to a specific inspection should be of a single type, grade, class, size and composition, manufactured under essentially the same conditions and at essentially the same time. The units of product are not expected to be identical under microscopic examination, which may find the units heterogeneous. Homogeneity may be obtained by examining a series or group of units produced: From the same batch of raw material, components or subassemblies; By the same production or assembly line with the same molds, dies, patterns, personnel, etc.; or During a unit of time such as an hour, a day, a week, a shift, etc. (MIL-HDBK-53).

34. Initial Product Inspection (IPI). The PVI performed during early stages or production on selected characteristics of an item to obtain confidence that the contractor can produce the item to contract requirements.

35. Intensity. The degree to which DoD examines a product or associated characteristics.

36. Maintainability. A characteristic of design and installation which is expressed as the probability that an item will be retained in or restored to a specified condition within a given period of time when maintenance is performed according to prescribed procedures and resources (MIL-STD-109).

37. Major Subsystem. The major functional part of a weapon system which is essential to operational completeness. Examples are: airframe, propulsion, armament, guidance and communications (AFM 67-1).

38. Marking. Application by stamping, stenciling, printing, or painting by numbers, item name, National Stock Number, address symbols or colors on containers, tags, labels, or item for identification during shipment, handling, and storage. (This does not include symbols used for material identification, such as color codings or repetitive symbols on metals (MIL-STD-129.)

39. Materiel Deficiency Report. A notice received by a CAO from a Government receiving or using activity that relates to an unsatisfactory condition. Notices may be made by letter, message, or department/agency form.

40. Material Review Board (MRB). The formal contractor-Government board established for the purpose of reviewing, evaluating, and disposing of specific nonconforming supplies or services; and for assuring the initiation and accomplishment of corrective action to preclude recurrence (MIL-STD-109).

41. Metrology Audits. The systematic review and evaluation by technical specialists to determine the adequacy of the contractor's system for calibration and measurement.

42. Noncomplex Item. An item having quality characteristics for which simple measurements and test of the end item is sufficient to determine conformance to contract requirements.

43. Nonconforming Supplies and Services. Those supplies and services which contain one or more departures from the contractural requirements.

a. *Type I Nonconformance.* Those supplies which depart from contract requirements and affect one or more of the following major areas: performance, durability, interchangeability, effective use or operations, weight or appearance (where a factor), health or safety.

b. *Type II Nonconformance.* For purposes herein, departures are considered minor when they lack importance or significance from the manner or to degree that has no subsequent bearing on the effective use or operation of the item or related components for its intended application. Those supplies or services which depart from contract requirements and are minor in that they do not affect any of the criteria specified in type I above.

44. Objective Quality Evidence. Any statement of fact, either quantitative or qualitative, pertaining to the quality of a product or service based on observations, measurements, or tests which can be verified. (Evidence will be expressed in terms of specific quality requirements or characteristics. These characteristics are identified in drawings, specifications, and other documents which describe the item process, or procedure.)(MIL-STD-109).

45. Off-The-Shelf-Item. An item produced and placed in stock by a contractor prior to the contractor receiving orders or contracts for the sale of the item. The contractor may produce the items to either commercial or military/Federal item specifications or descriptions. Includes items stocked by distributors for which Government controls may be received. (ASPR 14-001.7).

46. Packing. Application or use of packs and assembling of packaged or unpackaged items therein, together with necessary blocking, bracing, cushioning, and weatherproofing, plus exterior strapping or reinforcement and marking (MIL-STD-129).

47. PQA Preaward Survey Participant. The individual appointed by the quality assurance component of the CAO to perform the preaward survey as it relates to a contractor's quality control capability. This individual signs the "survey made by" block of the DD Form 1524-2.

48. Preaward Survey. An evaluation of a contractor's capability to perform a specific proposed contract.

49. Preaward Survey Monitor. The person designated to administer the preaward survey from the receipt of the request through the issuance of the final report (ASPR K-102,1).

50. Preaward Survey Review Board. A board established to review and approve or disapprove preaward survey report (ASPR K-102.3).

51. Preservation Packaging. Application or use of protective measures, including appropriate cleaning and drying methods, preservatives, protective wrappings, cushioning and interior containers, and complete identification marking, up to, but not including, the exterior shipping container (MIL-STD-129).

52. Procedures Evaluation. The continuous verification of the contractor's adherence to his written procedures and workbooks.

53. Procedures Review. The initial review of the contractor's written procedures and workbooks including changes thereto to determine the adequacy of the procedures for the purpose intended.

54. Product Verification Inspection. Physical inspection or test of product by the Government after inspection and acceptance by the contractor's quality organization. When conditions make separate inspection impractical, the Government may accomplish product verification by the witnessing of certain testing in conjunction with the contractor's inspection.

55. Quality Assurance. A planned and systematic pattern of all actions necessary to provide adequate confidence that the item or product conforms to established technical requirements.

56. Quality Assurance Letters of Instructions and Special Inspection Requirements. Instruction issued by the PO or their technical activities regarding the type and extent of Government inspection pertaining to contracts for specific supplies or services that are complex or for which unusual requirements have been established (ASPR 14-201(c)).

57. Quality Assurance Preaward Survey Monitor. The individual appointed by the QA component of the CAO to monitor preaward survey actions.

58. Quality Assurance Preaward Survey Support Participant. An individual assigned to assist the quality assurance preaward survey participant to provide specialized skills required during the preaward survey.

59. Quality Assurance Representative (QAR). An organizational title assigned to the individual responsible for the Government PQA function at a given contractor's facility.

60. Quality Assurance Specialist (QAS). The classification title assigned to personnel in the GS-1900 series.

61. Quality Control. A management function whereby control of quality of raw or produced material is exercised for the purpose of preventing production of defective material (MIL-STD-109).

62. Quality Data. Documented objective evidence in the form of records and reports that reflect the results of actions taken to control quality or to assure that quality is controlled.

63. Quality Instruction. The written procedures which describe techniques, and processes in any area of the contractor's operation which influence compliance with contract requirements.

64. Radioactive Materials. Any contract end item, components thereof, or materials used in the manufacture of the end item which is radioactive to the extent that radioactivity per gram is greater than 0.002 microcuries. Contracts which may involve radioactive materials may include, but are not limited to, contracts for aircraft, ammunition, missiles, vehicles, electronic tubes, instrument panel gages, compasses, and identification markers.

65. Reliability. The probability that an item will perform its intended function for a specified interval under stated conditions (MIL-STD-109).

66. Repaired Material. Nonconforming material subjected to a process designed to reduce but not completely eliminate the nonconformance. (MIL-STD-1520, USAF).

67. Request for Waiver. The formal document prepared by the contractor, or his subcontractors, and submitted by the prime contractor to the Government for the purpose of requesting acceptance of the designated nonconforming supplies or services, or for requesting temporary relief from a technical requirement of the contract.

68. Reworked Material. Material that was nonconforming but has been subjected to a process that restores all nonconforming characteristics to the requirements in the contract, specification, drawing, or other approved product description.

(MIL-STD-1520, USAF).

69. Selective Evaluation. Request for PQA at subcontract level which indicates specific actions to be performed, e.g. specific characteristics to be verified, tests to be witnessed, and records, reports, and certificates to be evaluated. Selective evaluations are generally of a one time nature.

70. Shift. The daily working period of a group. Employees normally report to a work station at an assigned time and perform work assignments for a given number of hours. When this period is ended they have then completed a "shift". This work period can not be extended to a week's work, a month's work, or some other arbitrary period. For PQA purposes, the QAR is not required to be present during each shift provided: Planned inspections can be performed on the material produced during that period; the contractor is agreeable to this arrangement; and there will be no delay in production/delivery.

71. Special Processes. Specialized methods involved in the production or inspection of products.

72. Standard Repair Process. A technique for repairing a nonconformance, developed by the contractor and approved by the Government, when it has been demonstrated that the technique, properly applied, will result in an adequate and cost-effective method for dispositioning the nonconformance. (MIL-STD-1520, USAF).
NOTE: Standard repairs are to be limited to those repairs: Defined as such in contractor procedures; generally used from contract to contract; and used in repair of those nonconformances common to a product or process, that occur frequently, and cannot be completely eliminated through corrective action.

73. Statements of Quality. See objective quality evidence.

74. Subcontract. Any contract, other than a prime contract, entered into by a prime contractor or subcontractor calling for supplies or services required for the performance of any one or more prime contracts (ASPR 8-101.24).

75. Subcontractor. Any supplier, distributor, vendor or firm which furnishes supplies or services to or for a prime contractor or another subcontractor (ASPR 14-001.5).

76. System. A combination of two or more equipments, generally physically separated when in operation, and such other components, assemblies, subassemblies and parts necessary to perform an operational function or functions (AFR 67-25).

77. Team Coordinator. The person designated by the preaward survey monitor to coordinate the on-site survey and make arrangements for plant visits and conduct team conferences as necessary before, during, or after the plant visit (ASPR K-102.2).

78. Technical Activity (TA). The Government activity responsible for technical requirements (e.g., specifications, drawings, and standards) and for prescribing inspection, testing, or other contract quality requirements that are essential to assure the integrity of products and services.

79. Technical Publication. Operational, maintenance and overhaul instructions, part lists or part breakdowns, and related technical information or procedures for the use of Government equipment.

80. Testing. An element of inspection and generally denotes the determination by technical means of properties or elements of supplies or components thereof, including functional operation, and involves the application of established scientific principles and procedures (ASPR 14-001.4).

81. Test Procedure. A formal written plan for testing an item to a requirement as defined by contract. Such test plans are subject to approval by the Government, normally the technical activity.

82. Test Report. A formal document describing

the method of test and the results of a test.

83. User Data. The information received from the recipient of supplies or services furnished by a contractor such as rejection notices, all types of customer complaints (URs, DMRs, failure reports, etc.). This includes information from supply and maintenance activities or the actual users of the supplies or the recipient of services.

84. Visual Acuity. Keenness of perception and sharpness of vision.

a. Far vision, Snellen Chart, 20/50.

b. Near vision, Jaeger 1 at 14 inches or reduced Snellen, 20/20 or equivalent.

85. Waiver. A written authorization to accept a configuration item or other designated items which, during production or after having been submitted for inspection, are found to depart from specified requirements, but nevertheless are considered suitable for "use as is" or after rework by an approved method (MIL-STD-480).

86. WRITTEN Quality Procedures. The basic written documentation required to be prepared by the contractor under the terms of his contract.

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